

NATIONAL ELECTRAGIST

FORMERLY ELECTRICAL CONTRACTOR-DEALER
WITH RADIO SERVICE SUPPLEMENT

Vol. 22, No. 1

Official Journal of ASSOCIATION OF ELECTRAGISTS—International

NOVEMBER, 1922



Every Bull Dog Safety Type Switch has quick make, quick break, interlocks, Type A construction and bears Underwriter's Classification "A."



Your Life hangs by two Threads

Beware of the switch whose blades are connected to the cross bar by a screw with two feeble threads.

These threads strip easily leaving one or more blades in contact when the switch handle indicates that the current is off. The most serious accidents do happen in such cases.

These accidents cannot occur with the **Bull Dog Safety Switch**. Note the unit blade construction illustrated at the left. A special analysis steel rod, covered with horn fibre tubing, runs through all blades being doubly insulated by a horn fibre bushing cold flowed into each blade. All blades **must** come out together.

Plenty of wiring room in the cabinet with knockouts everywhere saves wiring costs. Prices are comparative. Not only must you protect the safety of yourself and your men, but you owe it to your customer to see that he gets a Switch that is safe.

BULL DOG
MUTUAL ELECTRIC & MACHINE CO.
DETROIT MICH. U.S.A.

858 W. FORT STREET

Switch Manufacturers for Over 20 Years

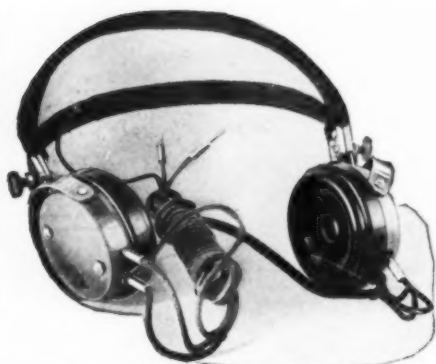


347
"THE BEST THAT MONEY CAN BUY"
 V8A88LJ

THE RADIO TRADE



MARK OF QUALITY



DeVeau Gold Seal Radio Head Set
 Cat. No. 843



DeVeau "Silvertone Standard" Radio
 Loud-Speaker. Cat. No. 833



DeVeau Gold Seal Radio
 Head Set. Cat. No. 844



DeVeau "Silvertone Junior" Radio Loud-
 Speaker. Cat. No. 834



DeVeau "Silvertone Station Type" Radio
 Loud-Speaker. Cat. No. 836



DeVeau "Silvertone Midget"
 Radio Loud-Speaker.
 Cat. No. 835



DeVeau Radio Hand Micro-Trans-
 mitter. Cat. No. 845



DeVeau Radio Desk Micro-Transmitter
 Cat. No. 846



DeVeau Radio Adjustable Arm
 Micro-Transmitter. Cat. No. 847



DeVeau Radio Flat Plug. Cat. No.
 829. DeVeau Radio Round Plug.
 Cat. No. 828

We manufacture the following RADIO APPARATUS:—DeVeau "Gold Seal" Radio Head Sets, DeVeau "Silvertone" Loud-Speakers, DeVeau Radio Transmitters, DeVeau Radio Cams, DeVeau Radio Jacks, DeVeau Radio Binding Posts, DeVeau Radio Phonograph Attachments, DeVeau Radio Plugs, and other Radio Specialties.

SEND FOR DESCRIPTIVE DATA AND DISCOUNTS

STANLEY & PATTERSON, INC.

New York, U. S. A.

DISTRICT SALES OFFICES:

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 C. R. Corcoran
 100 Boylston St.
 BUFFALO
 C. K. Wyatt
 241 Lexington Ave. Real Estate Trust Bldg.

SAN ANTONIO
 Kemp Haythorne
 333 McKinley Ave.
 PHILADELPHIA
 J. A. Vaughan
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PITTSBURGH
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 P. L. Hoadley
 Seaboard Bldg.

LOUISVILLE
 Electrical Sales Co.
 Kenyon Bldg.

SAN FRANCISCO
 Clapp & LaMoree
 589 Howard St.

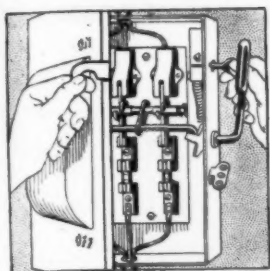
CHICAGO
 Doherty-Hafner Co.
 730 W. Monroe St.

LOS ANGELES
 Clapp & LaMoree
 310 E. 4th St.

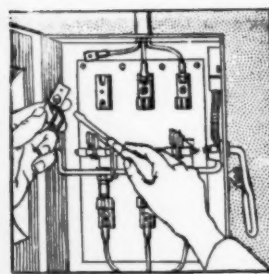
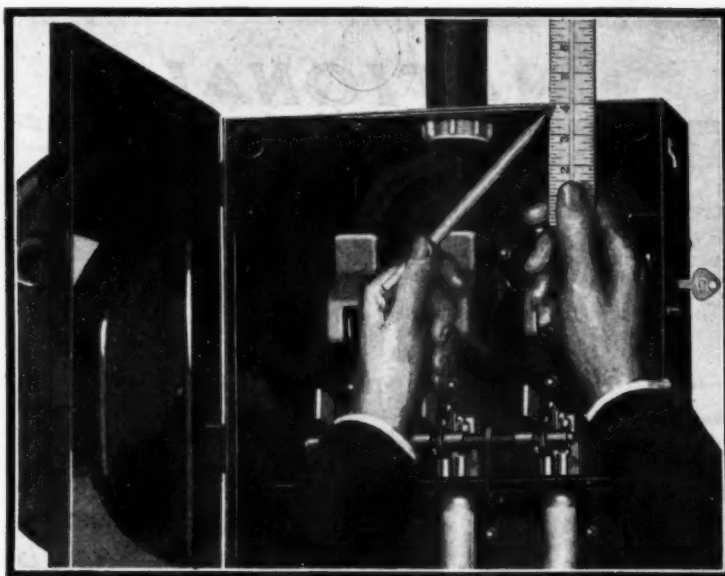
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 602 Equity Bldg.

HABANA
 Arnesto N. Rodriguez
 Abreu Bldg.



Only authorized persons having key can open the box when the switch is on



Individual bases permit removal of any blade or jaw in 3 minutes



Built For Quick Wiring and Inexpensive Installation

Ample Wiring Space and Easy-Wiring End Plates Make This New Square D Easy to Install

In many enclosed switches the wiring space is so cramped that an average installation requires too much time and effort. The illustration shows how this defect has been overcome in the new Square D, 100 amp. size. In larger switches the wiring space is proportionately greater. Easy-Wiring end plates with porcelain bushings and knockouts are available for any kind of conduit or open wiring and give additional speed in installation.

Positive Operation—Low Maintenance

The new Square D is remarkable for its low maintenance costs. The Square D Multi-Spring jaws give satisfactory contact with oversize or even blistered blades; they do not distort, can be easily realigned—and are in every way superior to the milled or punched clip jaw. Positive contact is further insured by an insulated steel cross bar which cannot warp or char.

It is operated by a quick make and quick break mechanism that is protected from the clogging action of dirt and grease. All current carrying parts are mounted on individual bases of moulded insulating material instead of a single slate base. Any blade or jaw can be replaced in 3 minutes from the front of the box.

Square D Patented Cover Control

Unless the box is locked, anyone can open the cover when the switch is off and close the switch after shutting the cover. But authorized persons with the key can open the cover without interrupting the circuit and operate the switch with the cover open—impossible in any other switch.

If you want to see the new Square D and convince yourself of its unquestioned superiority, write or telephone our nearest office.

SQUARE D COMPANY, DETROIT, U. S. A.

BRANCH OFFICES

Boston Pittsburgh
Buffalo St. Louis
Chicago Toronto
New York Philadelphia

FACTORIES AT:

DETROIT, MICH. PERU, IND. WALKERVILLE, ONT.

BRANCH OFFICES

Cincinnati Atlanta
Milwaukee Cleveland
Montreal San Francisco

SQUARE D SAFETY SWITCH



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585247

NATIONAL ELECTRAGIST

FORMERLY ELECTRICAL CONTRACTOR-DEALER

(Trade Mark)

The Official Journal Published Monthly by the Association of
Electragists—International

Radio Service Supplement Last Section

Volume 22

NOVEMBER, 1922

Number 1

TO OUR READERS

All matter for publication must be in the hands of the Editor by the 10th of the month preceding publication.

All changes in our mailing list should be received by us two weeks prior to date of publication of the issue with which the change is to take effect.

TO OUR ADVERTISERS

Changes in advertisements and all advertising copy should reach our office not later than the TENTH OF THE MONTH previous to the date of issue.

SUBSCRIPTION RATES

One Year, Domestic.....\$2.00
Foreign Subscriptions, including Canada, per year.....\$2.50
Single Copies.....20 cents

Copyright, 1922, by Association of Electragists—International.

Entered as second-class matter September 1, 1919, at the Post Office at Utica, New York, under the act of March 3, 1879.

PUBLICATION OFFICE:

11 Liberty Street, Utica, N. Y.

Editorial and Business Office:

15 West 37th Street, New York City

Table of Contents and Advertising Index Next to Last Page Preceding Radio Service Supplement

Suppose

That in every house you wired you could install 70% more switches. You'd make some effort to get the profit on those switches, wouldn't you?



An "Undark" luminous locator in the button of a Bryant 2901 switch adds 25 cents to the selling price. It's worth more than 25 cents to your customer. The effort of selling the idea to him will bring you the profit on the added 25 cents.

You don't have to wish for more business. The business is waiting for you to ask for it.

THE BRYANT ELECTRIC COMPANY

BRIDGEPORT, CONN.

NEW YORK

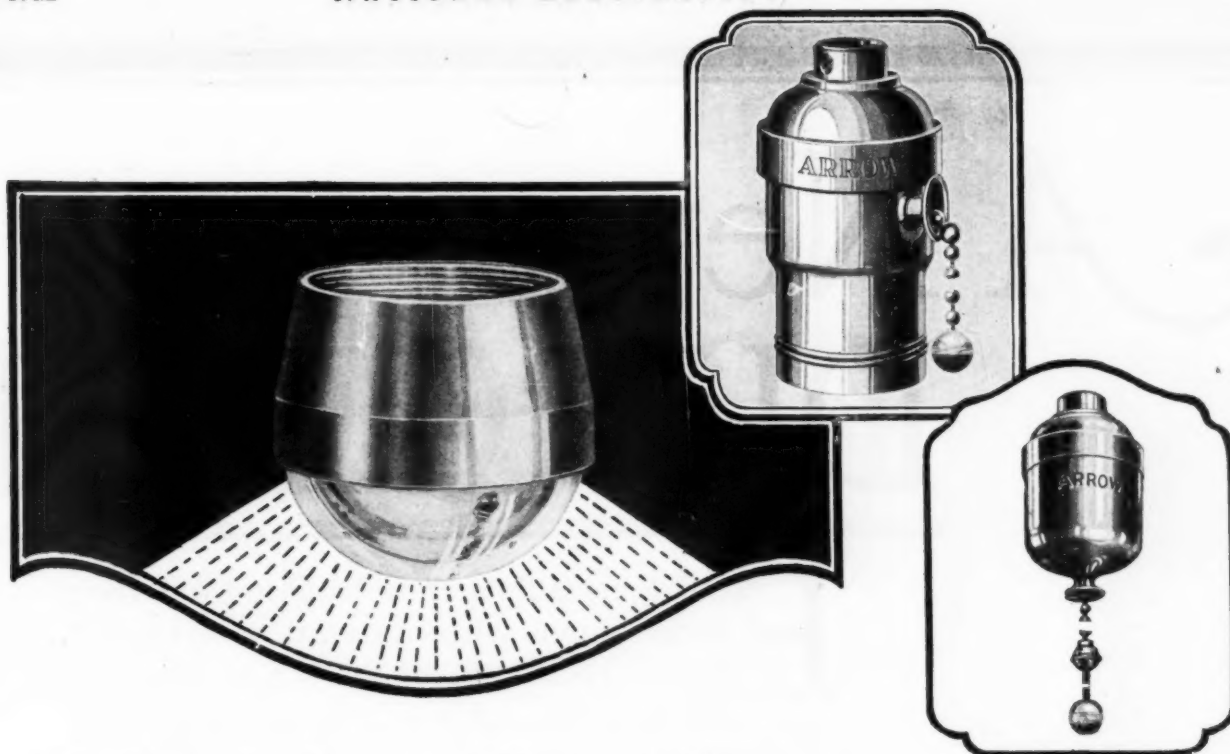
342 Madison Avenue

CHICAGO

844 West Adams Street

SAN FRANCISCO

149 New Montgomery Street



Another Arrow Convenience

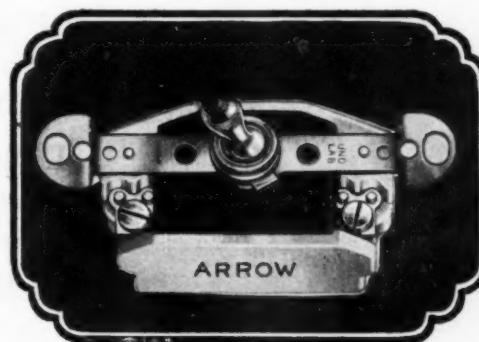
THE Arrow Electric Company announce that the chain balls on all Arrow Pull Sockets, cord balls on all Arrow Pull Switches, and handles on all Arrow Toggle Switches, both surface and flush, are now threaded to take a radium luminous tip. We feel confident that this improvement will prove to be as great a convenience in sockets and switches as the Uno bead was in shadeholders.

The luminous tips contain "Undark" Radium Luminous material enclosed for protection and mounted on a threaded brass ferrule to be screwed directly to these different Arrow products.

Hereafter it will be unnecessary to order special material or replace an old installation in order to obtain the luminous feature. You can simply screw a new Arrow luminous tip to standard articles. It automatically locks into place.

This is another step in standardization for the Arrow line and another point of progress in Arrow Service.

THE ARROW ELECTRIC CO.
HARTFORD CONN.



ARROW

The complete line of Wiring Devices

A New DURABILT

FOR generations New England has been synonymous with the word "craftsman," that careful type of workman who has taken great pride in the building of an instrument, a machine, a piece of cloth, or what-not, to which he could point with pride.

In Rhode Island alone, such workmen as this have made "Brown & Sharpe" represent "accuracy" in the field of precision instruments, "Fruit of the Loom" typify "dependability" in the cotton industry, and "Gorham" stand for "quality" in the silversmith world—and so it goes in numberless cases.

With a heritage of this kind, it is only natural that we in our field should endeavor to manufacture materials to which we can point with a just pride—materials that are standards by which others are judged in the Electrical Industry.

DURADUCT and DURACORD are just such materials, and now we are offering to the trade a new product—a product that can and will take its place along with our other DURA-

■ ■ ■

DURAFLEX
ARMORED CONDUCTOR

TUBULAR WOVEN FABRIC CO.

PRODUCT

BILT products—in this case, DURAFLEX, an armored conductor.

When planning to make DURAFLEX, we started with the assumption that while good appearance and “workability” were *desirable*, *Safety was absolutely essential*. We figured that ordinary armored conductors could easily hide a poor interior with a good-looking exterior—and that a poor interior is a *real danger*.

This meant that we must use 100% highest quality conductors in DURAFLEX and this, in turn, meant that we must make these conductors ourselves, so that the completed article, from the inside out, would be made under our own careful supervision.

Only in this way could we assure ourselves of the best of wire, for by getting it from outside sources responsibility would be constantly shifted and liability of error increased.

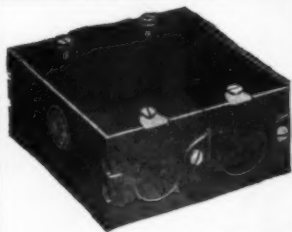
We are therefore making the wire ourselves, and thus we are able to subject it to the most rigid of tests, and because of this we can stand back of every foot of it.

Therefore, the fact that DURAFLEX is made in its entirety in our own plant, enables us to truthfully say that it is not only easy to work, but it is Safe. This not only assures your customers of quality material, but insures you against any “come-back.”

■ ■ ■

DURAFLEX
ARMORED CONDUCTOR
REG. U.S. PAT. OFF.

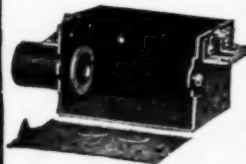
PAWTUCKET, RHODE ISLAND



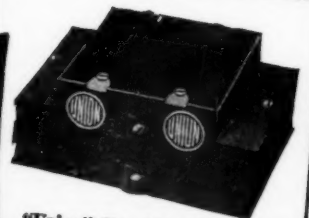
"Union" No. 170 2-Gang Box



"Union" Tandem 2-Gang Box



"Gem" BS Box
Showing Type R Bushing



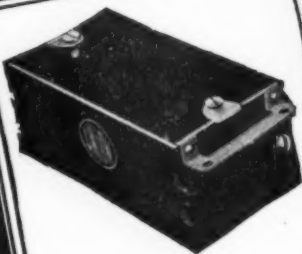
"Union" No. 160 2-Gang Box



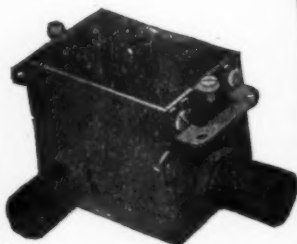
"Union"
SS Single Box



"Gem" F Box



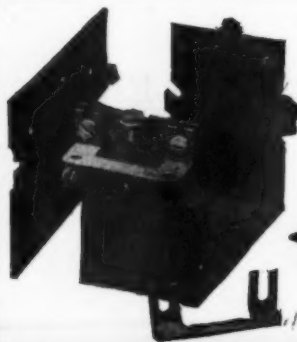
"Gem" R Box



"Gem" B Box



"Union" No. 170
Single Box



"Gem" C Box
(Dis-assembled)



"Gem" X Box

It Pays to Tie Up to a STANDARD Line

When you sell or use any article of *standard* make you are always sure of satisfactory results. Throughout the trade "Gem" have always been recognized as the *standard* Sectional Switch Boxes. They are the *original* boxes of the type. Numerous refinements of design not found in ordinary boxes are embodied in

"GEM" Sectional Switch Boxes

Don't let guess work play any part in your selection of boxes. You cannot afford to be influenced by extravagant claims. You take no chance when you buy "Gem" Boxes. Your judgment is backed by the endorsement of thousands of leading contractors who use these boxes. Why experiment with inferior imitations?

Write for Catalog No. 29.

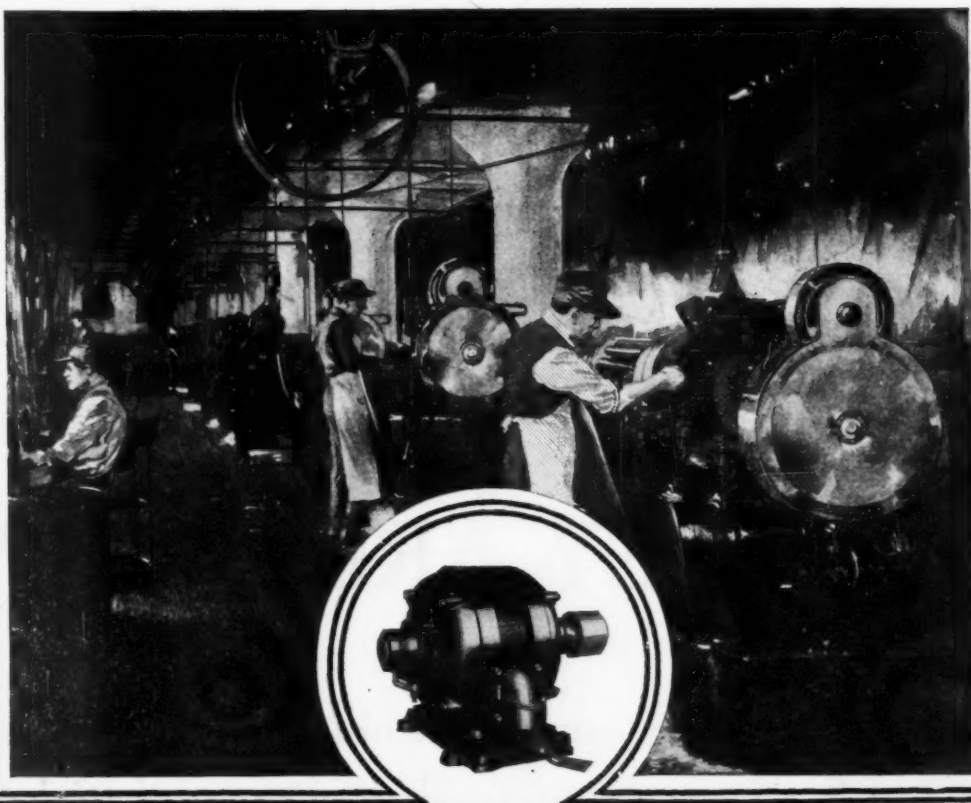
Chicago Fuse Mfg. Co.

Manufacturers of Switch and Outlet Boxes, Cutout Bases, Fuse Plugs, Automobile Fuses, Renewable and Non-Renewable Enclosed Fuses.

CHICAGO

NEW YORK

REG. U.S.
PAT. OFF.



THE workman on premium or piecework, the factory superintendent, the production manager, the plant engineer—all find R & M motor reliability an important factor in their work. The low temperature rating, large overload capacity and rugged construction of the motors reduce maintenance expenses and keep the wheels turning during periods of forced production and heavy overloads as well as during times of normal demand. Every man in the plant who is responsible for production and operating costs will usually say a good word for the R & M motors when new equipment is needed.

And every factor in the distribution of R & M motors, contractor, dealer, jobber, finds this attitude of the factory men who use the motors, an influence which makes for a steadily increasing motor business.

THE ROBBINS & MYERS COMPANY

SPRINGFIELD, OHIO

BRANTFORD, ONTARIO

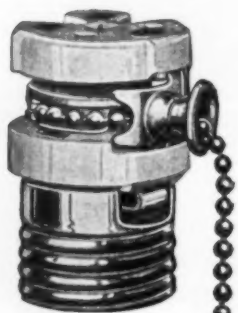
Robbins & Myers Motors

WEBER DEPENDABLE WIRING DEVICES

BE LOYAL TO ROYAL SOCKETS



THEY ARE INTERCHANGEABLE
DEPENDABLE
LICENSED



They employ a familiar construction, but give unmistakable evidence of that nicety of manufacture and perfection of finish that have distinguished all Weber goods for more than fifteen years.



"Royal"
Pull Socket

And the Line is Complete

6 Socket Bodies
8 Switch and Rosette Bodies
20 Caps 19 Bases

On your next order for porcelain sockets, specify WEBER

CONSULT OUR CATALOG

HENRY D. SEARS

General Sales Agent

80 BOYLSTON STREET
BOSTON 11, MASSACHUSETTS

SALES REPRESENTATIVES IN:

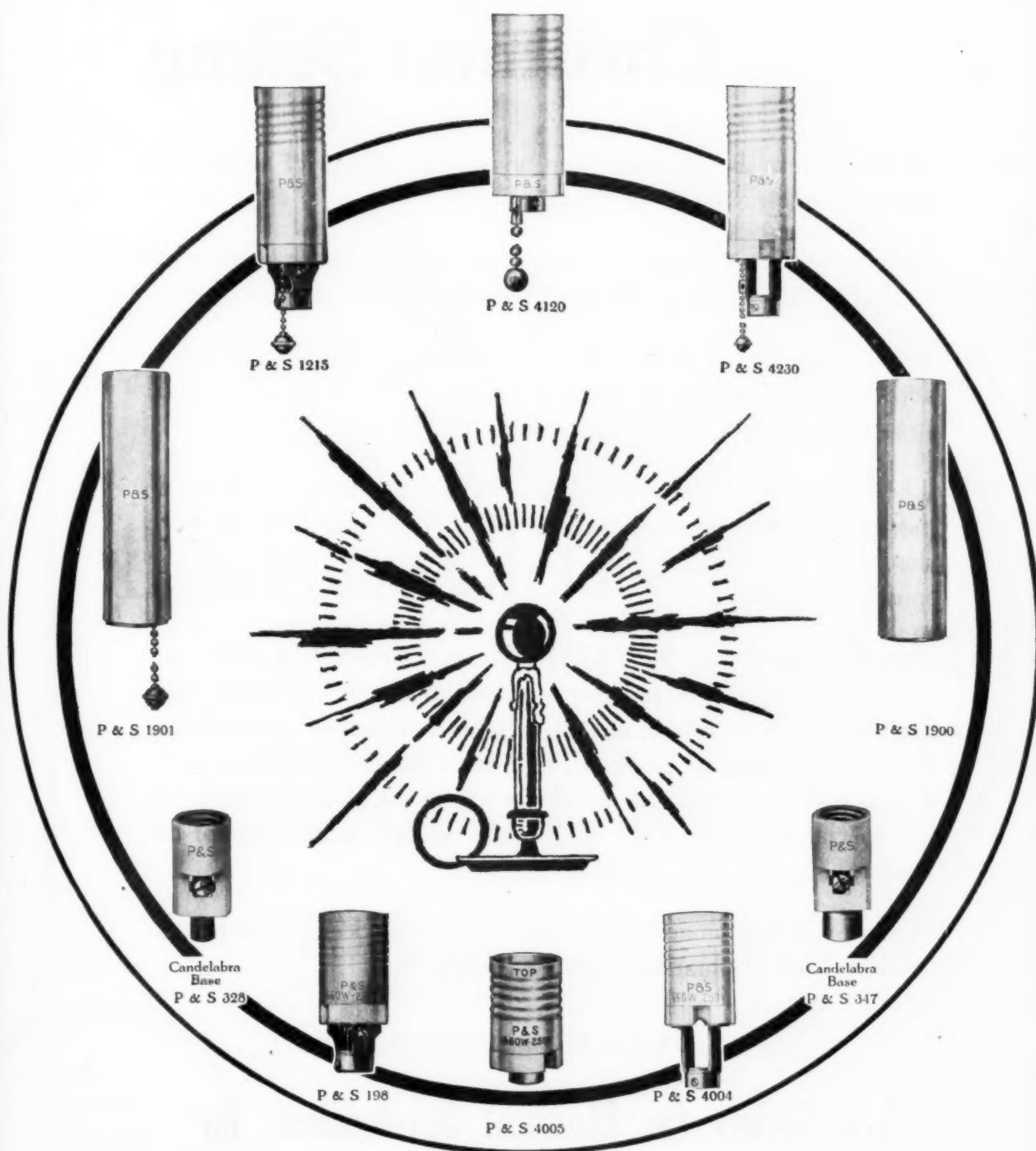
New York
Birmingham

Philadelphia
San Francisco

Cleveland

Chicago
Los Angeles

CANDLE SOCKETS



PASS & SEYMOUR, INC.

SOLVAY, NEW YORK

NEW YORK

BOSTON

PHILADELPHIA

SAN FRANCISCO

CHICAGO

Prepare Now for Christmas Selling

Within a few short weeks, Christmas—that season of wonderful business opportunity—will be here.

Now is the time to prepare for it—to bring to the notice of the public that things electrical are the most acceptable Christmas gifts.

The Contractor can solicit complete wiring installations and additions to existing ones to be given as Christmas presents. He should stress additional “convenience outlets.”

The Dealer selling appliances and fixtures needs no reminder of their appropriateness as Christmas gifts. His windows and store should be suitably decorated and his assistants imbued with the spirit of the season.

The Society for Electrical Development is cooperating with your Association to aid you in every way possible with Christmas Selling Helps. A broadside has already been mailed to you outlining the splendid assistance offered, and from the letter enclosed with it, you will learn that you can obtain any or all of this material, on this special occasion, at the same prices charged to members of the Society.

If a copy of the broadside did not reach your desk, write for another and for information about the Society to:

STAFF HEADQUARTERS

The Society for Electrical Development, Inc.

522 FIFTH AVENUE

NEW YORK, N. Y.





Xmas Folders to Increase Your Xmas Profits

Ask for these Xmas Folders.

They will give you bigger Xmas Profits.

When the printer puts on these folders your address, your letter and your signature they will surely get attention—and better yet, they'll bring business to your store.

*Write our nearest House today so you'll surely
get your folders in time.*

**A
National
Electrical
Service**

Western Electric Company

New York
Brooklyn
Newark
Syracuse
Buffalo
New Haven
Boston
Providence
Pittsburgh

Philadelphia

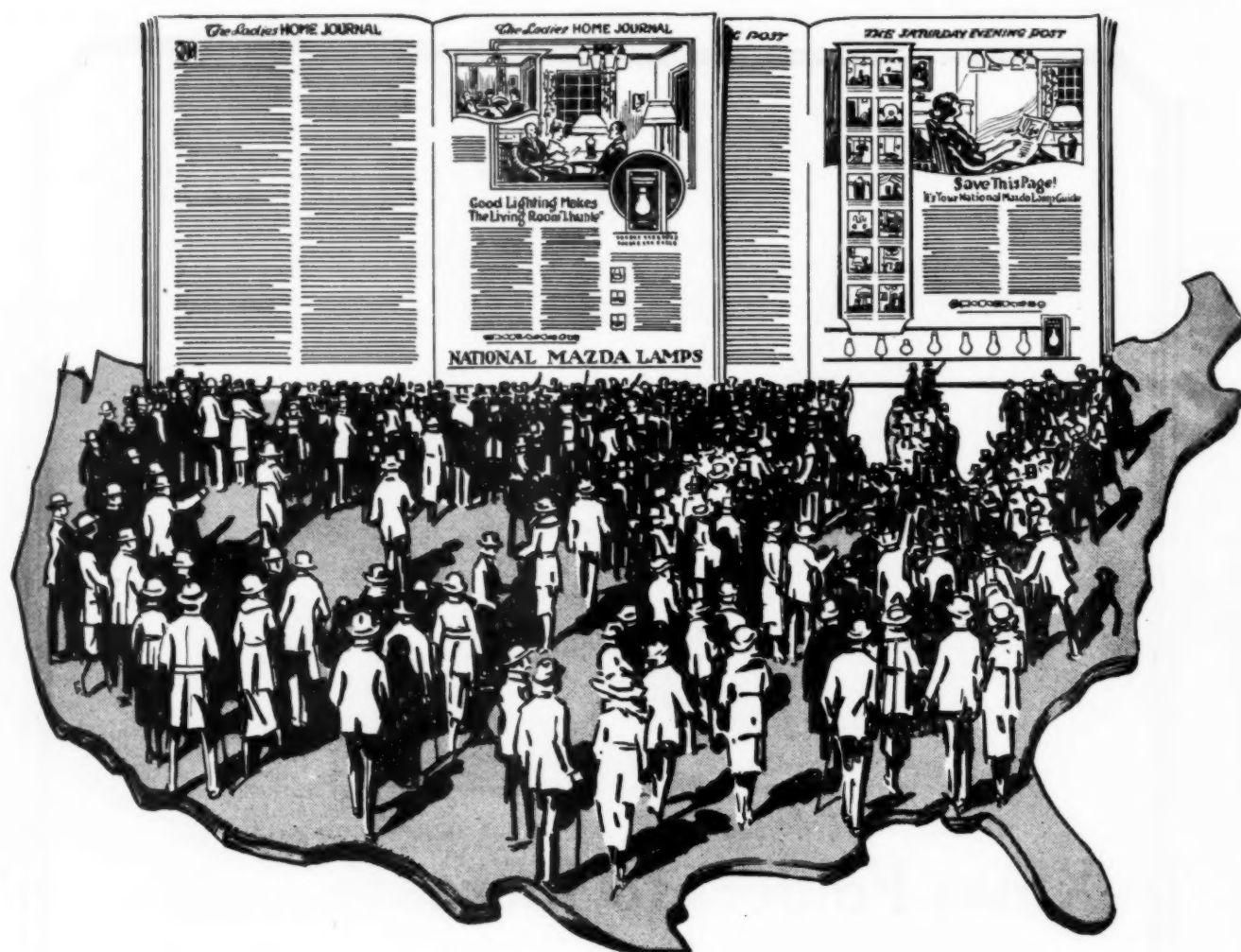
Atlanta
Savannah
New Orleans
Birmingham
Jacksonville
Richmond
Norfolk
Charlotte
Youngstown

Chicago
Indianapolis
Detroit
Milwaukee
Grand Rapids
Cleveland
Minneapolis
St. Paul
Duluth
Baltimore

Kansas City
Oklahoma City
St. Louis
Memphis
Omaha
Cincinnati
Columbus
Nashville
Dallas

Houston

San Francisco
Oakland
Los Angeles
Seattle
Portland
Spokane
Tacoma
Denver
Salt Lake City



Throughout the United States!

NOVEMBER is the month of months to push sales in the home lighting field. These shorter days mean more hours of artificial illumination in the homes of the United States. And more than 9,000,000 of these homes are wired.

To help you cash in on these opportunities, our November home-lighting advertising to consumers covers an unusually large field, telling the story of home lighting to more people than previously reached in any one month this year. The 2,000,000 readers of the *Ladies' Home Journal* and the more than that number of *Saturday Evening Post* readers, to whom our November advertising goes, are scattered throughout the length and breadth of the country, and the majority of them are potential buyers of National MAZDA lamps.

The *Ladies' Home Journal* advertisement tells how "Good Lighting Makes the Living Room 'Livable.'" The advertisement appearing in the November 25th issue of the *Saturday Evening Post* furnishes every reader with a "National MAZDA Lamp Guide," showing the proper lamps to be used for the various fixtures in the home.

The home lighting field with its 9,000,000 or more wired homes—half of them poorly lighted—is the logical field for every electrical jobber and retailer to aggressively enter. National MAZDA lamp advertising has been addressed to this field throughout the entire year. It is to the advantage of every jobber and retailer to give a good share of his attention to this most profitable lighting market. National Lamp Works of General Electric Company, Nela Park, Cleveland, Ohio.

NATIONAL MAZDA LAMPS



"We can't hold these old line contractors with anything but Sprague Products"

It is a fact! The established trade wants the kind it has used for years,—the kind that has won its confidence.

Old line contractors who have tried them all have found it doesn't pay to shop around for something cheaper.

When they buy Sprague conduit products they know what they are getting; they know they can always say with pride to their customer—"Yes Sir! we gave you good, honest reliable materials—made by Sprague—the oldest and most experienced concern in the business".

If you would hold the old, substantial trade and firmly establish yourself with the new, don't try substituting something cheaper.

THE OLD LINE CONTRACTORS KNOW—The others soon learn.

SPRAGUE STANDARD CONDUIT PRODUCTS

- 1—Greenfielduct. Rigid Conduit—Galvanized throughout; Hot Dip Process.
- 2—Spragueduct. Rigid Conduit; Black enameled inside and out.
- 3—BX. Flexible armored conductor; Rubber insulation (20 years the standard)
- 4—BXL. Flexible armored conductor; Leaded (For damp places.)
- 5—SS. Flexible armored conductor; Single Strip armoring (very flexible)
- 6—Flexible Conduit; For pulling conductors into (Conforms to any surface.)
- 7—Outlet Boxes and Fittings—A complete line; For concrete and regular work.
- 8—Spraguelets—The new all combination conduit bodies.



SPRAGUE ELECTRIC WORKS

Of General Electric Company

Main Offices
527 W. 34th St. New York

PIONEERS OF THE INDUSTRY

Branch Offices
in Principal Cities





The Seal of Approval

Performance is what counts with the user—and performance is what has won for D & W Fuses the seal of approval of leading industrial plants, railroads, subway systems, and other large users.

Sturdy construction is largely responsible for D & W success. First quality fibre tubes resist the pressure of short-circuit blowouts and all metal parts are carefully gauged and machined for perfect fit and maximum strength. A special filler effectually smothers the arc

and positive ventilation dissipates the gases.

Use N.E.C. Standard Fuses for average circuits—renewable where the removal percentage of blowouts is high. Indicating type fuses should be used wherever visual inspection is possible.

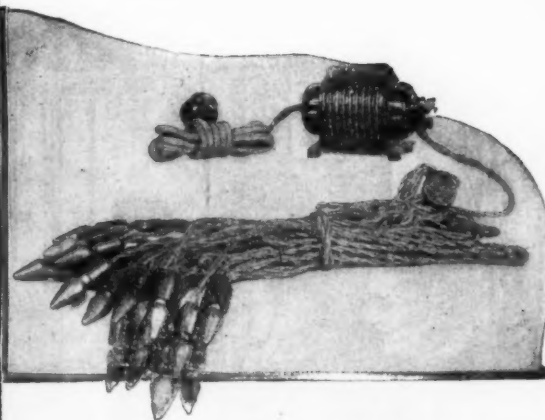
A fuse is a protective device—its value is in direct ratio to the quality of the protection afforded. Dependability and accurate rating are essential to positive protection—D & W Fuses have both.

For sale or for use, why not standardize on a fuse you can trust?



Fuse Division
of General Electric Company
Bridgeport Connecticut

DWFA



The Toy Transformer that lights the Christmas tree.

Two Services in One for Christmas Sales

Holiday buying this year will be bigger and better than ever—particularly for electric decorations and toys.

The G-E Christmas Arborlux (a combination Toy Transformer and Multiple Xmas Tree Lighting Outfit) will be one of the most popular sellers not only because it has a timely appeal and because the Toy Transformer feature extends its usefulness but also because G-E National advertising in November and December is broadcasting the Arborlux story to over 2 million prospects.

Window display suggestions and dealer helps are now available to help you sell Arborlux.

Stock now for immediate business.

Address any G-E distributor or Merchandise Dept., General Electric Company, Bridgeport, Conn.



This is the picture package, printed in attractive orange and blue, in which every Arborlux set is packed. The outfit consists of the transformer, 17 lamps, and the necessary wiring, sockets and plug ready for immediate use on any c-c. lighting circuit.

General Electric Company

General Office
Schenectady, N.Y.

Sales Offices in
all large cities

53A-130



Run-down batteries need not be the reason for missing any broadcast programs

Insure Your Customers Against Weak Reception

Whenever you sell a tube set for radio reception be sure to insure your customers' permanent satisfaction by selling with the set a *reliable* battery charger.

Tungar

BATTERY CHARGER

will charge both A and B storage batteries efficiently and economically with a minimum of trouble. It is a device which has seen years of service for charging automobile batteries and can, therefore, be recommended with perfect safety by conscientious radio dealers.

Don't take chances with your customers by selling a new and untried device by an unknown maker. Tungar is of well-known reliability and is manufactured and guaranteed by the General Electric Company, the world's largest electrical manufacturer.

Write for literature and prices to Merchandise Dept., General Electric Company, Bridgeport, Conn.



Tungar Battery Charger—saves disappointments and annoyance

Tungar is made easy for dealers to sell by extensive advertising in radio papers and by a complete line of dealer helps including lantern slides, window display, booklets, and newspaper electrotypes.

General Electric

General Office
Schenectady, N.Y. **Company** Sales Offices in
all large cities

35A-89

NATIONAL ELECTRAGIST

FORMERLY ELECTRICAL CONTRACTOR-DEALER

(Trade Mark)

Official Journal of the
Association of Electragists—International

Publication Office: 11 Liberty St., Utica, N. Y.

Editorial and Business Offices: 15 West 37th St., New York City

Volume 22

NOVEMBER, 1922

Number 1

The Annual Conventions

No sooner had the last annual convention of the National Association ended than preparations were started for the next one. Washington, D. C., is the place named for holding the 1923 convention, the exact date not having yet been set.

At the 22nd annual event held in Cincinnati last month, the title of the National Association of Electrical Contractors and Dealers was changed to the Association of Electragists—International, in keeping with the new word adopted by the organization. The proposed amendments to the constitution and bylaws were passed in their entirety, so that the newly named association is now to start in a reorganized form.

From all appearances the Cincinnati convention was a most harmonious affair in every respect. Members and guests were present from all sections of the United States and Canada, and every session was well attended.

In the following pages the proceedings are set forth in a running story, and as soon as the official report is completed the minutes in detail will be printed and sent to all members of the organization.

The next Executive Committee meeting will be held at Headquarters in New York City about the middle of March, 1923, when officers of the association will be elected.

Localizing the New Word

On several different pages of this issue, in the section known as Organization Activities, there is shown a series of newspaper advertisements. These examples present briefs for the new word electragist, and are designed for local use.

In order to establish a permanent value for the new word, it must come into general usage. The public must be told the meaning of the word. It must be iterated and reiterated until every man, woman, and child—even in remote sections of the earth—can distinguish the difference between an electrician and an electragist.

This new word must be localized. It even now is quite generally understood in the electrical industry. Members of the International Association recognize its value. The public must become familiar with its meaning and must be brought to a realization of its true value to those who employ electricity in their daily endeavors.

The series of local newspaper advertisements in question, if consistently and persistently used, soon will lead the public to the regular use of the word. And as soon as the in-

habitants of any locality become familiar with the true meaning of this word, it naturally follows that the one time electrical contractor-dealer instantly is a thing of the past—gone forever.

Active members of their newly named association will at once grasp the opportunity offered by this series of local newspaper advertisements, and it is hoped that all members will see the advantage of putting the series into practical use without delay.

Quality Makes for Service

There is not another industry existing in the world today so definitely dedicated and applied to fundamental service as is the electrical.

Electricity does the seemingly impossible. It turns darkness into light—cold into heat—it solidifies liquids and liquifies solids. It changes disease into health. It is omnipresent but invisible, and is actively engaged in working for human betterment and continued human comfort whether humanity be sleeping or waking. It is a source of justifiable pride for all those who come in business contact with it and should be correspondingly inspirational.

If an individual buys an electrical household appliance it is bought not as an acquisition, the thing to be desired because a like one is owned by a neighbor—not essentially for its beauty, as a fine picture or other work of art is purchased—not as a rare jewel, for its uniqueness and true intrinsic value. It is bought for its quality of giving comfort, for the improvement of household conditions, for genuine service.

Years ago in the elementary days of studied salesmanship there were three principles which were considered the ABC of selling. These requisites were Knowledge, Confidence and Enthusiasm. Nowadays while these are still necessary in the salesman's education, there is an almost retroactive condition, and they are even more essential to the buyer.

Take the purchase of the simple electric toaster for instance—the consumer is given knowledge of it—he acquires confidence in it, and the use of it inspires enthusiasm. With the convenience and quick comfort it evolves, he is stimulated to new purchases and to larger electrical investments. His education is beginning to move along.

It is true that a salesman should know every available fact concerning his stock—that fact has been repeatedly proven—but the consumer's education is fully as necessary and perhaps more so. Get the article into use! People do not give up comforts when once tried because they do

not like them. Financial stress might cause their disuse, but not distaste.

The successful salesman must educate his prospect in the benefits, the enjoyment to be derived from the use of his article.

The best thing about the uses of electricity is that it gives such service as has been claimed for it. This, to be sure, if all integral parts of the apparatus requiring power are of the best material and the workmanship up to standard requirements.

Electricity in its marvelously dignified service is worthy of trustworthy mediums of expression. If dealers will only insist on the standardized equipment, they need never fear a cessation of business. The public given proper knowledge has confidence and then its demands grow.

Begin with a big or little sale as the opportunity may be offered. Whatever is sold let it be from the standpoint of quality first and electricity will take care of the service.

Electrical appliances and wiring are not purchased for the sake of possession—they are bought because of confidence in the service they are said to render. Be careful that you dealers are not deceived in your buying and see to it that you do not deceive your ultimate consumer in the selling.

Importance of Turnover

We are all prone to think our own personality a distinct one. We all are willing at some time or other to admit to ourselves that our mental processes are a bit different from those of other people—and our own opinion is seldom self derogatory. It has often been said that a man must think well of himself in order to favorably impress the world, and perhaps having a feeling that one is individually confident is a great asset.

Having confidence in one's business ability is indubitably so, and maintaining a faith in the stability of one's business itself is a state of mind distinctly necessary in order to achieve success. *But*, while there are differences of procedure, different volumes of trade, different kinds of people with whom business contact is established, there is always one essential point in every form of selling merchandise which is invariably the same. The amount of money invested makes not one iota of difference; the form a business takes, retailing, wholesaling, manufacturing, or peddling—there is no escape from the fact of sameness—turnover!

Turnover must be thoroughly understood and figured to a nicety for those who expect to keep their dollars active.

Everybody realizes that a bank must keep its dollars aggressively active each day in order to pay dividends. The perishable market commodities such as fruits, vegetables and meats must be turned over in a given number of hours, else an immediate loss ensues. Turnover is the axis on which the wheels of progress turn. A spoke or two may be out, the hub a little loose, or the rim wobbly, and though very faulty, it will in some manner keep the vehicle going; but what good is a wheel in perfect condition without an axle to turn on?

Electricians, do you know the close relationship of turnover and profit? Do you know what "equivalent merchandise investment" means?

Too few merchants are willing to face what should be the proper trend in all successful business—the increase of

turnover, thereby decreasing the percentage of profit. Only large margins of profit need be added to slow moving stocks, and small margins to those that turn over quickly.

This establishes quantity selling as the greatest modern profit policy. The investment which returns the small *rate* of profit the greatest number of times during a given period brings in a larger *volume* of profit because of its activity.

It will not do for any business man to think of his business wholly as a personality and therefore different.

The great fundamental principle of turnover applies to every investment, and from it there can be no deviation without a backward tendency.

Value of Advertising

Economy often starts at the wrong end. After the war, when a marked slump in business was predicted, business men began to economize. Perhaps they did not think it necessary to economize in living expenditures, or in the purchase of additional merchandise to keep up their stocks. Wartime shortages had taught them fear of depleted stocks, so their first cut was almost invariably in advertising.

Where was their psychology? When the public is careful where it spends its money, it is in need of and it seeks guidance. It will spend all it can afford, but it wants to be shown where it can get the best and most for its money. When money is free and business cannot supply the demand, the great public is not so wise and careful, nor is it so interested in where advertising leads it—it can afford to buy anywhere and even, arrogantly, to make mistakes.

The day of extravagant advertising is past. Copy is educational and reliable, not emotional nor tricky. Chicanery in business passed with the side shows in dime museums and painted white elephants. Mr. Barnum's public liked to be fooled, but Grover Cleveland, Theodore Roosevelt and General Pershing have taught it something different.

Advertising now means the giving out of real information. Wild promises create distrust. Good advertising is conducive to confidence and confidence promulgates good business.

New commodities properly exploited prove that advertising still pays. Look at the results of it as illustrated by Eskimo Pie said to be practically unknown less than a year ago. New things must be advertised and old concerns cannot afford to lag behind or cease to keep their names and products in the public eye.

It is said no man ever lived who could not be spared. The discontinuance of a firm or a manufactured article never yet has put the business world really awry. Invariably something as good or better came right along to take its place.

John Wanamaker takes righteous pride in being the successor of A. T. Stewart, but would A. T. Stewart's successor in business be the mighty monument of success he is today, with a world round reputation, if he had let A. T. Stewart's name lapse into oblivion and just "kept store" as plain John Wanamaker, without advertising either himself or A. T. Stewart? And see how he upholds his faith and maintains his principle—he is not satisfied with just the vastness of it all, for after all these many decades he himself still writes some part of each daily advertisement.

Business men who economize on advertising are the blind ones who are the first to grumble and wonder why their business "freezes up."

Annual Meeting of National Association Held at Cincinnati, Ohio

**Big Convention Took Place for Three Days, October 11-13;
Executive Committee Had Two Day Session Preceding**

The Twenty-Second Annual Convention of the National Association of Electrical Contractors and Dealers in Cincinnati will long be remembered by all who had the good fortune to attend it. For it was good fortune for anybody interested in the electrical business to have been in attendance at such an important meeting, as a reading of its proceedings in the following pages will prove.

The great affair was held for three days from Wednesday, October 11, to and including Friday, October 13—even the dire calamities predicted to happen on that day did not materialize in the slightest degree! Preceding the convention the Executive Committee met for two days on Monday and Tuesday, October 9 and 10. All sessions were held in the Hotel Sinton.

When the weather for several days preceding proved so unfavorable it was feared that the forces for evil had conspired against the hope that this might be the best convention ever held. But on Thursday, the second day, and the day of all days because of the annual outing scheduled to take place, the dismal atmosphere changed and good weather prevailed on that day and from then on.

It was evident that every session of the convention was keenly enjoyed by the attendants. The speakers all had a message of distinct application to specific problems, and the business transacted undoubtedly will go far toward

making possible for the Association such work in the future as was not dreamed of in the past.

Too much praise cannot be given chairmen and members of the local committees who had charge of such a large part of the arrangements for the convention. Every committee carried out its function in as admirable a way as possible. Nothing was overlooked. Everybody did well the task set before him. The Advisory and Executive Committee was made up of: Charles M. Beltzhoover, Chairman; J. A. Brett, W. W. Freeman, F. D. Van Winkle, and Thomas Quinlan.

Especially should the Entertainment Committee be complimented on its splendid program. This committee contracted to do a good job, a big one as well, and it carried out to the letter every specification called for in the original plan. On each day arrangements were made to entertain the ladies while the men were in attendance at the business sessions. The Entertainment Committee included the following: E. J. Ertel, Chairman; Wm. G. Reuter, A. R. Loughborough, C. A. Reichel, S. D. Heed, W. R. Keagy, and Garfield Winkler.

Several of the speeches given at the convention are printed in this issue. The minutes of the convention proceedings including the Executive Committee sessions will be published and issued to the membership at an early date.

National Executive Committee Meetings

All Members Were Present With Few Exceptions and Much Important Business Transacted

The first of the two days' session of the Executive Committee preceding the general convention opened on Monday morning, October 9. Due to the late arrival of a number of the members from the east the session was not called to order by National Chairman James R. Strong until ten thirty o'clock, a half hour after the appointed time.

As roll was called by National Secretary Farquison Johnson all responded with the exception of A. J. Hixon of Boston, G. M. Chapman of Waterbury, J. F. Buchanan of Philadelphia, and L. H. Lamont of Chicago, and several who were still further delayed by late arrival of trains. Mr. Hixon it was learned was unable to be present on account of other business matters to which he was forced to attend, and Mr. Chapman could not come on account of undergoing an unfortunate operation at that time.

P. F. Letts of Vancouver represented

C. H. E. Williams of that city. In place of Mr. Chapman the chair appointed Ernest McCleary of Detroit, and L. K. Comstock of New York was asked to fill the vacancy caused by the absence of Mr. Buchanan.

As usual the first matter to come before the meeting was the approval of the minutes of the previous meeting held at National Headquarters in March. Next came the appointment by the chair of the 1923 Convention Committee and the same members were selected as have served in that capacity for sometime, as follows: G. M. Sanborn, Indianapolis, Chairman; J. E. Sweeney, Waterloo; and W. Creighton Peet of New York.

The secretary read the names of twenty-five new applicants for membership which had been received in the short time previous to the convention so that members could not vote on them by mail but had to consider their eli-

gibility at the meeting. A large proportion of the new applications were the result of Special Representative Davis' excellent promotional activities in the field during his recent trip of ten thousand miles in company with K. A. McIntyre of the Society for Electrical Development. Among them were some of the most prominent contractors on the Pacific Coast that resumed their affiliations with the National Association.

The first report to be presented to the meeting was that of the secretary-treasurer. In this it was brought out that the Association had experienced a rather trying period during the preceding year due to the general business depression that hit all lines of trade. A distinct falling off in revenue was noticeable. Receipts from advertising in the official journal were curtailed as were receipts from all other sources.

Notwithstanding the financial handi-

cap of the Association the report showed that the activities at Headquarters have been kept up, perhaps in modified form but nevertheless effectively.

Special Representative Laurence W. Davis reported on his work in the field. He stated that he had just finished a ten thousand mile trip during which he found a rapidly improving business outlook.

The condition is righting itself, the special representative said, through improving business; through the shaking down of business methods, and healthy economies in operation by the better established contractors and dealers; through the gradual absorption of the poorer fitted ones; and by the realization on the part of the thinking men that only through association can the situation be finally cleared.

National Chairman Strong reported that the proposed amendments to the constitution as adopted at the previous Executive Committee meeting had been well received by the membership.

He advised that the constitution of the National Electric Light Association had been changed to permit a contractor-dealer representative on its executive committee, and that he was the first one to be honored by being appointed to such position. In this connection the national chairman stated that he is also a member of the executive committee of the Society for Electrical Development and had been elected to membership on the Joint Committee for Business Development. The fact that such positions are being held by a contractor-dealer representative, he said, is significant of the good spirit of co-operation that is being developed among the branches.

In the absence of Mr. Hixon the secretary read the report of the Central Station Committee. The work of this committee it is believed is so closely related to the work of the commercial section of the National Electric Light Association that it is difficult to point out definite results obtained. The closer relations between the contractor-dealer and the central station are, however, noted and honored, Mr. Hixon said.

A. Penn Denton of Kansas City, Chairman of the Code Committee, advised that the principal work of his committee had been that of carrying out the code revision work of the committee on wiring standards and systems of the electrical committee of the National Fire Protection Association. To this committee he said had been referred some of the most important changes that will be made in the National Electrical Code for the 1923 edition. This closed the business for the morning.

Arthur L. Abbott of Saint Paul, Chairman, opened the afternoon session by a report of the Cost Data Committee. He set forth the great amount of work incident to the upkeep of the Manual of Estimating and set forth a proposal made by Robert H. Tuttle, industrial engineer of Minneapolis, to take over the checking, revising and extending the scope of the Manual and the Labor Cost Record System.

The report of the Legislation Committee was read by the Chairman H. P. Foley of Washington, in which it was pointed out that a considerable amount of money is being spent by the government on work that should be done by electragnists but which is being lost to the industry. A resolution was passed seeking to overcome this condition.

Other reports approved after being read and discussed were as follows: Credit and Accounting Committee by J. E. Sweeney of Waterloo, Chairman; Insurance Committee by J. A. Fowler, Memphis, Chairman; Publication Committee by Paul H. Jaehnig, Newark, Chairman; and U. S. Chamber of Commerce, Robley S. Stearnes, New Orleans, Chairman. Adjournment was then taken until the following day.

On Tuesday morning Mr. Strong called the meeting to order promptly at the appointed time and announced that the report of the Convention Committee as to where and when the next annual convention would take place would be made on board the boat during the outing on Thursday afternoon.

For the Universal Data and Sales Book Committee, Chairman J. A. Fowler of Memphis advised that the revision of the book proposed at the last Executive Committee meeting had been started by eliminating or changing sales sheets and developing the book from a purely data standpoint. He will welcome assistance from the membership so that the Electragnists' Data Book, as it will be called, can be made a more valuable contribution to the literature of the industry.

The General Counsel, Franz Neilson of New York, gave a report on the word Electragnist, reviewing in detail the procedure to have it trademarked for the exclusive use of the National Association and advising how the term is now being protected since the trademark was granted by the U. S. Patent Office. It was voted to have this report discussed before the general convention.

Considerable discussion took place during the last afternoon session of the Executive Committee meeting. Among



James R. Strong, New York City, who now is president instead of just a chairman

C. M. Beltzhoover, Cincinnati, does a Napoleon pose on the Island Queen Outing

E. H. Eardley, Salt Lake City, exhibits his western smile that won't come off

Franz Neilson, New York City, the electragnists' legal light is making his point

Samuel Adams Chase of New York, East Pittsburgh, Brooklyn, and New Jersey

the numerous subjects brought up was that of the electragist's relation to the jobber. Mr. Denton who led in this discussion pointed out the need for close

coöperation between the two branches and presented a resolution to this end that was adopted.

Recommendations in Mr. Davis' re-

port concerning local work were gone into with action being taken to better through association effort and otherwise the conditions in the various localities.

Convening of the Great Convention

Representatives From All Parts of the United States and Canada Were in Daily Attendance

When on Wednesday morning, October 11, the gavel sounded bringing to order the opening session of the general convention, as attentive an audience was ready to listen to the speakers' remarks as ever gathered in a convention hall. Charles M. Beltzhoover, Local Convention Chairman, who opened the meeting, greeted all with a manifest air that the Cincinnati electrical interests were determined to make the Twenty-Second Annual Convention of the National Association of Electrical Contractors and Dealers in that city the best one ever held. After brief remarks for the welfare of everybody who would attend the great meeting, Mr. Beltzhoover introduced W. C. Culkins, executive secretary of the Cincinnati Chamber of Commerce, who was to make the address of welcome in place of Mayor Geo. P. Carrel, prevented from being in attendance.

Mr. Culkins expressed his regret that Mayor Carrel could not be present and said he felt the high honor in being chosen to speak in his stead.

He welcomed the delegates in behalf of the city of Cincinnati, the Chamber of Commerce of the city, and all the people of the city. He said that it is

a very wholesome sign that the movement towards organization of business men is actually taking place at last. Labor and agricultural interests have



Jack Caddigan's Wife and Jack Himself Came Down From Boston

been able to secure legislation favorable to themselves because they have had sense enough to organize, but the business men of the country have been too slow in taking steps in that direction. However, this is rapidly changing, and the business men have awakened to the necessity for organization in order to preserve their interests.

Mr. Culkins urged the members of the Association to take up and study the problems that confront the business world today, and to take their places as leaders in solving those problems.

The chair was then turned over to National Chairman James R. Strong, who thanked Mr. Culkins for his kindly welcome and said that he spoke on behalf of the entire membership in saying that they were glad of the opportunity to hold the Twenty-Second Annual Convention of the Association in the great city of Cincinnati, which had at one time sheltered Thomas A. Edison in his early days, when in 1870 he had struggled to perfect himself in the use of the Morse code. He referred to the fact that the Association had grown

from a membership of seventy-five in 1901 to a membership of twenty-four hundred in 1922.

The national chairman spoke of the friendly relations which have been established between this Association and other national associations in the electrical industry, culminating this year in a representative of the contractors and dealers' association being seated as a member of the executive committee of that grandpa of electrical organizations, the National Electric Light Association.

Mr. Strong also spoke of the adoption of the word Electragist last year when the Association had reached the advanced age of twenty-one, that word being intended to describe an electrical contractor dealer of high standing and ability, and reliability. He said that he was proud that he had been one of the founders of this organization, and he suggested as the keynote of this convention and its guiding principle the use of the words Good Fellowship.

In his address on "Business: Yesterday, Today and Tomorrow" George M. Verity, president of the American Rolling Mills Company of Middletown, Ohio, congratulated the members on be-



Canadian Members, P. F. Letts of Vancouver, and R. A. L. Gray of Toronto



Here's a Half Dozen Stalwart Members of the Chicago Contractors' Association

ing engaged in a live business which deals with a live subject.

Mr. Verity's paper—printed in another part of this issue—contained a message of belief that the electrical industry is destined to become, if it is not already, the greatest of all industries. With its natural resources and unlimited scope for development he presaged a future such as no other science can boast of.

Before closing the morning session an entirely new feature of the convention—something that had never before been done—was staged. This was the introduction of the Glad Hand Committee. The idea conceived was to have on this committee representatives from every part of the country in addition to local men who would by virtue of their location be in a position to see that everybody became acquainted.

J. A. Fowler of Memphis headed this committee. After introducing him as the silver tongued orator of the south, Mr. Strong named the other members of the committee and asked them all to come to the platform. The meeting was then turned over to Mr. Fowler. Mr. Strong had already struck the note of Good Fellowship in his opening remarks, and the acts carried out through the efforts of the Glad Handers went far to crystallize the thought.

After the midday adjournment a short business session was held and among other matters a Resolutions Committee was appointed to record all resolutions made and prepare them for presentation at the following session.

"The Supply Jobber and the Electragist" was the subject of an address made by W. R. Herstein of Memphis. Mr. Herstein is a jobber whose practices of dealing with practically only electragists are well known and therefore was

able to talk fittingly to the convention on this subject. He attempted to explain the obligations of each branch to the other.

As the jobber's responsibility to the electragist Mr. Herstein said that he should first differentiate between selling only staples of the industry and becoming more or less of a customer-merchant. He should employ salesmen who are careful that the right practice is rigidly carried out in every instance. The jobber should act in the capacity of a banker, stated Mr. Herstein, and he can be sure of his ground by judging the contractor-dealer's credit on the basis of capital, character and ability.

The electragist's responsibility to the jobber is to furnish an adequate outlet.



Raleigh Walker and Worcester Coghlin Get Snapped Without Knowing It

He should do business with the jobber exclusively in the matter of purchasing. His bills should be collected promptly. He should remember too that the jobber has feelings and as an excuse for not



Mrs. Abbott and Mrs. Hahn Looked Pretty and Natural for the Artist

paying a bill, "I'm too busy," won't go at all. Above all, the electragist should support his associations and organizations as an asset not only to the jobbers but every other branch, including his own business.

Frank E. Watts, editor of the *Electrical Record*, forcefully told what a great impetus had been given the electrical industry through the functions of the Joint Committee for Business Development. He briefly gave the history of that movement and explained at length how it is resulting and how it will greater result in far reaching benefits to all branches. Electragists are a determining factor in the movement, he said.

Following Mr. Watts' inspiring address a motion picture was shown entitled "Shop Profits." The film it was announced had been loaned by the Automotive Association and would be shown in place of the electrical film "Selling Something More," unavailable at that time.

The picture vividly told the story of the losses resulting from inefficient business methods due to the lack of knowledge of overhead, turnover, cost finding, accounting and other phases of every business which go to determine success or failure. The exhibition met with such approval that it was voted to have a similar film made to be shown by the jobbers in the interests of electragists.

The play "The Awakening of Mr. Moss" clearly portrayed the value of association and organization work to the individual business. Beginning with Mr. Moss of Averagetown as a contractor-dealer who through inefficient and oldtime methods coupled with lack of selling policies in any part of his organization, the story was told of how he was forced to employ better business



The Executive Committee of the Once National, Now International, Did Some Executing on the Boat Trip



Wall, Hansen and Robins, from the State that's Round on the Ends and Hi in the Middle

principles and become interested in association work in order to make enough money to provide for his family, thus ultimately developing his business into an unusually successful enterprise.

The play was immensely enjoyed by all—the ladies as well as the men—and

the employees of the Union Gas & Electric Company of Cincinnati, under whose auspices it was staged, should be heartily thanked for the production of the interesting and educational convention feature. It was learned that Mr. Freeman, president of the central station company, had a keen interest in the play and was anxious that it be performed successfully before the convention.

Early in the afternoon the ladies were entertained by an automobile trip to the Rookwood Pottery and the Zoo. These places are known all over the country as outstanding in the position held with other similar places.

In the evening the reception and dance took place in the ballroom where guests were received by the Glad Hand Committee. A corps of entertainers was provided whose quips and quirps at the expense of those present provoked much laughter and promoted general good feeling on the part of all.



A Slant at the Data Book Committee, Joe Fowler of Tennessee, Chairman, Top Left

readily and easily be determined by the right section.

E. H. Eardley of Salt Lake City, Chairman of the Engineers' Committee, read a very interesting paper on "Specific Specifications." He clearly pointed out the need for such specifications in electrical work. Not only is money lost by electragists through failure to fully specify work to be done, but he said that this condition after it has resulted to the operator's disadvantage creates a disposition on the part of the electragist to do a low grade job. He showed how the situation can be easily overcome by adequate specific specifications.

After discussion Mr. Eardley's papers, it was believed that the membership should be directly informed concerning the matter of specific specifications and it was voted to have a bulletin dealing with the subject mailed to them at an early date.

The Second Day's Program on Thursday

Attendants Enjoy Many Excellent Speeches as Well as Business Sessions

A discussion of the new Manual of Estimating was the first order of business on the second day's program. Arthur L. Abbott of Saint Paul, Chairman of the Cost Data Committee, lead the discussion and explained the reasons for the creation of such a manual and how it can be used most advantageously.

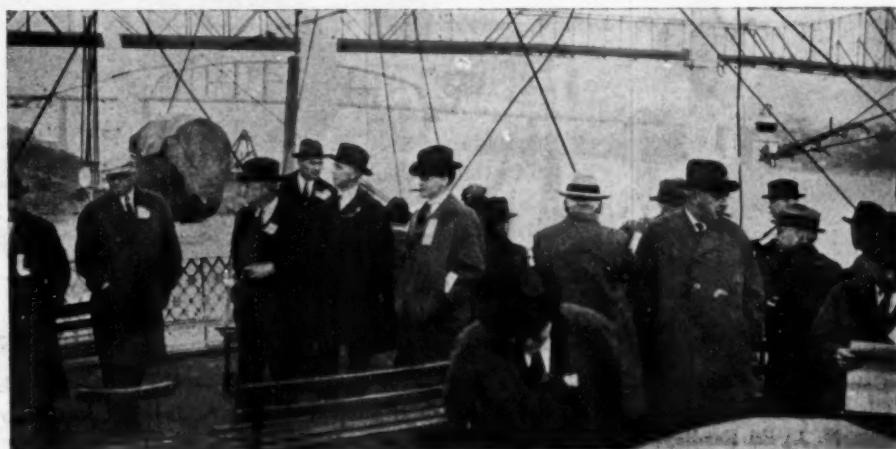
F. M. Feiker, vice president of the McGraw Hill Company, New York City, and former assistant to Secretary Hoover in the U. S. Department of Commerce, who had been requested to speak on the subject "Electrifying America—Getting the Job Done," was unfortunately prevented from attending, and his paper was read by O. H. Caldwell, editor of *Electrical Merchandising*.

It was Mr. Feiker's belief that the industry is starting on an increase in business both in the field of residence construction and industrial electrification. He commented on the fact that the electrical organization is better organized than any other industry, but urged that if this leadership is to continue it must have still further and greater organization.

"How an Employers' Association Functions" was the subject of a talk given by Edward T. Miller, secretary of the United Typothetae, Chicago. He first gave the general history of trade associations and then explained how the

workings of such modern groups should be effected.

Colonel Miller pointed out the similarity between the United Typothetae, the national association of employing printers, and the National Association of Electrical Contractors and Dealers. While the printing group had been organized long before the electrical organization came into existence, he said that the two groups have like functions to a large degree since members of both employ union and nonunion workmen. The insight into the functions of the United Typothetae was especially valuable in that this group has formed a separate section for each class of labor, and matters coming up for dispute can



Tom, Dick and Harry, as Well as Joe, Jim, Larry Enjoyed Views Along the Ohio River

Boat Ride Outing on Ohio River

Majestic Water Held Forth Many Thrills
to Conventionists on Thursday Afternoon

The annual outing was in the form of a boat trip on the Ohio River. The passenger steamer *Island Queen* had been chartered for the purpose which left the landing promptly at 2:30 in the afternoon of Thursday.

In order that all might have sufficient time to make arrangements for the trip the morning session of business on Thursday was adjourned on the minute of the time set, and when two o'clock came all were in readiness for the trip.

Of course the local arrangements committee couldn't let this opportunity go by without taking advantage of it to get in some excellent entertainment features, so a band was procured, a permit for a street march secured, and when the conventionists went from the hotel to the boat they marched in line formation to the tune of the music from one of Cincinnati's best bands.

Arriving at the boat everybody was given a program on presentation of his ticket—and her's too for this was a regular affair for the ladies—and permitted to go on board. Just why each and everyone had to produce credentials before going on the boat could not be understood for a while, but when it became known that somebody had a pet hobby aboard that would not stand for strangers, the reason was apparent.

The first feature of the outing was to watch a noted daredevil jump off of the high suspension bridge into the Ohio River. The man was seen on the railing of the bridge with two other people. Suddenly he jumped and amid the quick

gasps of the spectators he dived to the water. "What!—a man in his right mind doing such a thing as this, and the waters icy cold into which he had dove from a distance of a hundred feet or so?" "No, madam, that was not the figure of a live man, but a dummy instead." And sure enough it was—only a dummy! But the feat was enjoyed just the same and credit was due the local fellows for conceiving such a novel idea of entertainment.

The day was as clear as crystal and although colder than the season warranted, the atmosphere was unusually clear and the sights along both the Ohio and Kentucky shores appeared at their best. For those who did not care to stay on deck to note the grandeur of the scenery, the opportunity to enjoy dancing and other forms of entertainment was afforded within the bounds of the spacious cabin below.

After going as far down the river as Fern Bank Dam, the course of the boat was reversed. By that time it had grown dark and everybody was participating in the thrills of dancing. Garfield Winkler was master of ceremonies, and what a master of such ceremonies he is! You just danced and enjoyed it whether you wanted to or not. Surely nobody was on board that did not "shake 'em up" at one time or another.

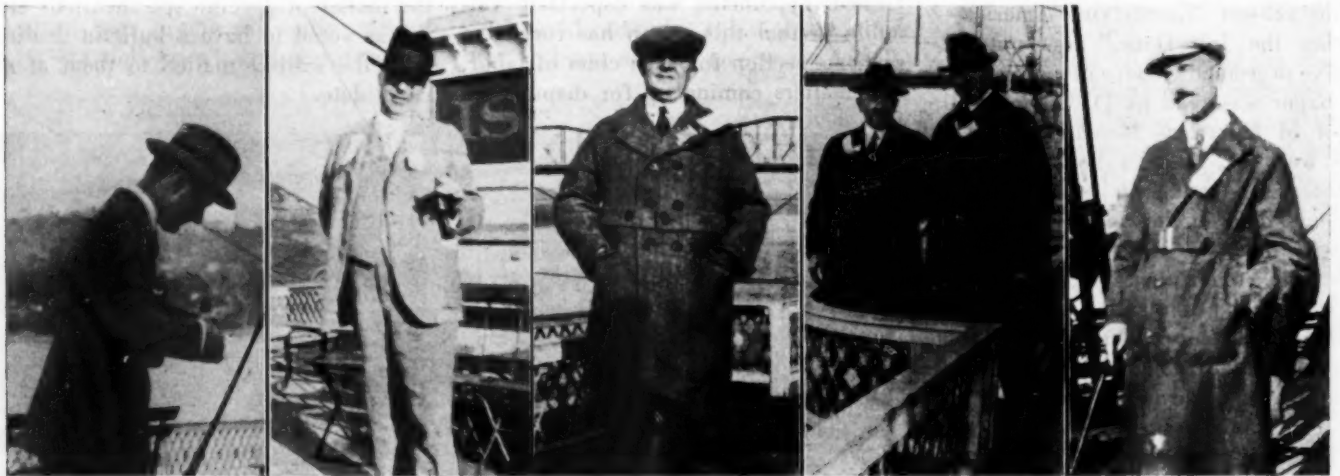
When dinner time came all assembled in single file and, led by the musicians to the strains of whose music all were kept in step, marched to the deck below where a cold plate feed was served.



The Tryon Smiths of New London, Conn.,
also Carried Their Camera

The entertainers proceeded to give of their best selections during the meal, and when it was over the entertainment became greatly enhanced by the addition of several new choristers; in fact everybody in the place had a part of some kind to play.

Of course the names of those taking the leading roles in the entertainment on the boat are too numerous to mention but space must permit of the mentioning of the ones who were most prominent in the singing of "Oogey Ugey Bow Bow" and "Monday's Wash Day" and featured in the buck and wing



Captain Larry Davis, the Camera Hound, Snaps Five Birds With One Film, as will be Seen, Right to Left: C. S. Nolloth, Local Gladhandler; Open Shop Secretary Crosby of Philadelphia; T. A. Jaehnig, Formerly Paul H., the Putandtake Expert of Newark, N. J.; Ed Eardley, the Specifications Man from Utah; and N. L. Walker of Raleigh, North Carolina, in a Pensive Mood; then the Camera Backfired and Shot Larry



Lovely Ladies Posed for News Editor Tut-hill Before Going Aboard for the Voyage

dancing: Jack Caddigan of Boston, Howard Foley of Washington, Bob Keck of Allentown, and Franz Neilson of New York head the list.

It was intended that an official photograph be taken of the conventionists on board the boat at Fern Bank Dam. But when the photographer showed up at the

Dam it was found that the water was too shallow to make a safe landing. That left Special Representative Davis, K. A. McIntyre of the Society for Electrical Development, and a few others who had cameras to do the job of snap shooting. They may be better electrical men than photographers, but the pictures reproduced on these pages aren't to be laughed at by any means—so far as the fine work of photography is concerned!

The boat docked at the landing from whence it started at nine o'clock, in time for all to get back to the hotels and get a good night's rest before the final day's business of the convention. A band was not on hand to lead the march from the landing back to convention headquarters but the crowd was happy nevertheless.



From Greater New York, Hugo Tollner, Louis Kalischer and Harry Hanft

Friday's Sessions Closed Momentous Occasion

Most Important Business of the Convention Transacted and Tribute Paid to All Participants

The proposed amendments to the National constitution and bylaws were taken up first at the morning session on Friday. Each section was voted on before voting on all sections as a whole. Discussions were short and each section went through with an overwhelming majority voting for its approval as it had been proposed.

Some of the most important changes to be made by the new constitution are: changing the title of the Association to the "Association of Electragists—International;" redivisioning of territory to make eight divisions instead of four; uninterlocking of state associations; and establishment of two labor sections to take care of the respective matters of union and nonunion labor.

Special Representative Laurence W. Davis made a talk on "How the National Can Improve the Electragist's Business." His remarks had added weight because of his recent trip of ten thousand miles which gave him many valuable insights into the electrical business as it is being done throughout the country at the present time.

Mr. Davis began his talk by stating what things the average contractor-dealer should guard against thinking the National Association can do for him. He pointed out that while much of the Association's work is tangible and can be so figured there is much more that is perhaps intangible but of far greater value than the work which can be figured in dollars and cents

terms. He urged that the members take full advantage of the opportunities offered through the National Association to promote their individual businesses and also to improve the business of the whole industry.

The time remaining after Mr. Davis' speech before midday adjournment was taken up in discussion of general work of the Association.

As a final entertainment feature for the ladies they were taken on a tour of inspection of some of Cincinnati's exclusive shops.

As the first matter on the afternoon's



Watching the Stuffed Gink Do His High and Lofty Dive from the Bridge of Size Across the Ohio

program a discussion took place of the National Electrical Code, led by A. Penn Denton of Kansas City, Chairman of the Code Committee. M. Denton gave a resume of his talk on that subject made before the Executive Committee.

This discussion was followed with and supported by a talk on the same subject by Dana Pierce, Chairman of the Electrical Committee of the National Fire Protection Association. The subject of Mr. Pierce's talk was "The National Electrical Code—Its Past, Present and Future."

He briefly gave the history of the Code since its inception about twenty-five years ago and explained the need for its observance at the present time. He said that the Code has grown with the industry and that those who have had it in charge have sought to make it a protection for the use of electricity in the best interest of all. He alluded to the great service that is rendered through the functioning of the Code.

W. W. Freeman, president of the Union Gas & Electric Company of Cincinnati, spoke on the wiring campaign that this company has recently effected. He told how a survey of the local conditions warranted such a campaign and how its result has stimulated business for all interests. It was his belief that a central station should be quick to take the leadership in a campaign of that nature when it was evident that such leadership should be taken by the power company.

These remarks were supported by



At Left: Electragists (See the Sign) Gathering in Front of the Hotel to March to the Boat, Led by the Brass Band and Followed by the Ladies in Autos; at Right, the Cincy Shore Line, With the Kentucky Skyline Across the River

John F. Gilchrist, president of the Commonwealth Edison Company of Chicago, who was asked by Mr. Strong to speak to the convention. Mr. Gilchrist emphasized the great need for all interests working together. He compared the electrical industry to the human body in that when any part of the latter organism needs the assistance of some other part that assistance is readily given. His outlook on the future was decidedly optimistic.

Miss Alice Carroll of the Society for Electrical Development presented much food for thought in her talk on "Selling the Electric Idea to the Ladies." She explained the need for electrical servants in the home and how these servants should be sold to get and keep the greatest support from buying housewives toward all things electrical.

She aptly described some of the pitfalls that stand in the way of the successful electrical merchant through the lack of proper judgment and discretion on the part of the salesmen employed to sell to the housewife. Have patience, be explicit and be courteous was the way Miss Carroll advised all to be who are engaged in the work of selling the electric idea to the ladies.

Following Miss Carroll's address Mr. Goodwin of the Society for Electrical Development spoke briefly on the Society's work and why it should have a greater support from electragists. He commented on the willingness of the S. E. D. to cooperate in every way possible with the National Association for the good of the members of both organizations.

The closing address of the convention was made by W. S. Ferguson of Lynton T. Block & Company of St. Louis on the subject of "Insurance for Electragists." Mr. Ferguson explained the value of the various forms of insurance and how the insurance of his company of which so many members of the National Association have taken advantage works out to their benefit.

Before the report of the Resolutions

Committee, which was the final business of the convention, Mr. Strong announced that the Convention Committee had met as planned and that it was decided to hold the 1923 convention in Washington, D. C., the time to be decided later.

With the adoption of the following resolution on behalf of the splendid efforts of the officers and committees in making the 1922 convention a success, the convention adjourned:

Whereas; We can unreservedly state that the Twenty-Second Annual Convention of the National Association has been a success from every possible point of view; therefore be it

Resolved: That at the close of this final session, we desire to record our sincere and heartfelt thanks to all who have so unselfishly contributed their time and efforts to the success of this Annual Convention, both by the membership of the organization and through their friends who have interested themselves in our behalf; and be it hereby ordered that a copy of this resolution in proper form be prepared and forwarded by the National Secretary to each and every one who has participated in the carrying out of our interesting and instructive program.

The Executive Committee held a short meeting on Friday evening to transact the business that had been left unfinished at any of the convention sessions or the preceding meetings of that committee on Monday and Tuesday.

Passing Thoughts of the Week's Activities

The Man Who is Always Seeing Things Submits Some of His Observations Relating to the Convention

Prohibition is so rigidly enforced down Cincinnati way that even the old Ohio river is dry. The boys had arranged to take the official photograph at Fernbank dam, but the boat couldn't negotiate a landing. Some mad wag said that if they had poured into the river all the White Rock that was ordered up into room (number given upon request), they could have landed the boat at the Hotel Sinton entrance.

Ward Thomas of the Bryant forces is not a practicing attorney, although it is said that he carries his evidence in a brief case. Evidently the revenue officers did not suspect the innocent looking brief case, so they didn't discover the evidence, and therefore Ward warded off further embarrassment.

That was a warm bunch of boys that came down from Washington, D. C., to take back with them the 1923 convention. They were good pluggers, all right, and convinced everybody concerned that the National Capital is the logical place for next year's event. As soon as the decision was announced, Lou Kalischer, Brooklyn's quick thinker, proposed for a slogan: "On to Washington"—so we'll lose no time in

getting onto Washington.

Speaking of slogans, "See You at Cincy" wasn't bad, and I hear that Larry Davis proposed that one. It resulted in bringing together a goodly crowd at the 22nd annual convention in Cincy—and the only things that went bad were the headquarters hotel and the weather man. However, everybody was happy—well, I should say!

Everybody calls him Charlie, and Beltzhooover is the last name. He's a prince—and he's got a little Kentucky princess for a wife. So when you praise Charlie for his earnest endeavors in making a success of the convention, don't forget that Mrs. Charlie was also on the job all the time, and that her efforts in hospitality are all greatly appreciated.

Tom Herschede, was the banker for the local boys. He is a firm advocate of the proper markup. When he started out to raise \$2,500 for the local fund from Cincinnati interests he wasn't satisfied until he went over the top. The result was a 35 percent markup on the original figure, and Tom smiled like a Chessycat when he turned over that amount to the National.



One of Many Bunches of Girls That Added to the Pleasures of the Annual Outing

You Know Me Al DeVeau (pronounced Devoo, with the accent on the voo), was busier than a bird dog on the boat trip after the editorial stiff of the NATIONAL ELECTRAGIST was presented with what appeared to be a quart of real stuff. Al and his associate band of pirates filched the alleged hootch and successfully made their escape, only to find that the bottle was filled with cold tea, and to get revenge, it is said that they forced Garry Sanborn to drink it, because he was the culprit that swiped it.

Thanks are due to Thomas (Myers) Quinlan, manager of the Convention and Publicity department of the Cincinnati Chamber of Commerce, and his able assistant, Howard Wilson, for their help in the registration bureau. Much credit is also due Miss Caslin, the efficient manager of registration, and her assistant, Miss Campbell, of National Headquarters, New York City, for the commendable arrangement provided for registering. By the way, that was a pleasing bevy of girls in room 200—what?

What would any gathering of electrical men be without Samuel Adams Chase, the beloved sage of the Westinghouse forces? Sam was at Cincy, always surrounded by such friends as Harry Kirkland, Bill Goodwin, and other staunch supporters who appreciate life the more because of counting Sam as a true friend.

The homespun twins, Hughey Tollner and Frank Libbon of the Brooklyn-Queens Contractors' Association, were always in evidence under the chaperonage of Louis Kalischer, (Inc.). Come to think of it, somebody tells me that the latter had a birthday while in Cincy—on Friday, the 13th—the lucky guy. It is rumored that in honor of

that event a celebration took place, to which were invited a few carefully chosen guests from various sections of the universe, including Worcester, Mass., N' Orleans, Manhattan, Hoosierapolis, Cape Cod, and Rye—or may be it's Scotch. A buffet lunch was a pleasing feature, and everybody got filled up with—enthusiasm and everything. Thanks.

George MacMannus (he spells it that way) of the Johns-Pratt Company wouldn't miss a gathering of electrical contractors for a month's salary—and they do say that's increased since he left the J.-M. sales department. George was an interested attendant at every meeting—and between sessions, too.

When George Mann, the blackface curbstoner referred to Allentown, Pa., as a whistling station on the Lehigh Valley railroad, Bob Keck resented it with a string of Pennsylvania Dutch that sounded like hail stones falling on a tin roof—but meant more in the native tongue. As long as Bob can operate his vocal chords, nobody can say anything against Allentown and get away with it.

Tom Chantler and O. C. Small of the Society for Electrical Development, are the only two playwrights known to fame who never saw their own play produced. Tom and O. C. wrote that much praised farce, "The Awakening of Mr. Moss," which was produced at the afternoon session on Wednesday, but on account of pressing business in New York City, were unable to attend the Convention. The farce was prepared within two days, and was one of the big hits of the entire convention proceedings. Surely the electrical industry as a whole, and the electragnists in particular, owe the Society a vote of thanks for the play, and another debt of grati-



Toronto Gray and Springfield, Ohio, Gray



Two Couples from Milwaukee, Mr. and Mrs. Charles Krech on the Ends, and Mr. and Mrs. T. W. Nixon. Charlie is Chairman, and Tom is Secretary-Treasurer of the Milwaukee District

tude should be recorded to the Union Gas & Electric Company of Cincinnati for so ably producing the farce.

Celebrities Honored

Resolution Extends Courtesy to Men Unable to Attend Convention

A resolution was passed at the second day's session of the convention in courtesy to the wizard celebrity, Thomas A. Edison, who was unable to be present to speak to the meeting as he had been invited to. Theodore Roosevelt and Gerard Swope, who also had been asked to make addresses were likewise prevented from attending. National Secretary Johnson read the prominent men's letters of regret and each letter was enthusiastically received by the large audience. They are printed below in the order of their presentation:

FROM THE LABORATORY OF
THOMAS A. EDISON

Orange, N. J., September 22, 1922.

Dear Sir:

It has been a source of much gratification to me to receive an invitation to attend the Convention of your Association at Cincinnati in the early part of October, and I thank you for your courtesy.

Were it not for previous engagements it would be a pleasure to attend the Convention for two reasons, one of which is that I would have an opportunity of meeting the members of your Association, and the other that it would be interesting for me to revisit Cincinnati—the City in which I had some interesting experiences in my telegraph-operator days in 1865. I regret, however, that I shall be unable to attend.

Will you please convey my congratulations to the members of your Association, and also the expression of my appreciation of the high standards they have maintained in the essential relation they bear to central station development and to the electrical industry in general.

Yours very truly,

(Signed) Thos. A. Edison.

NAVY DEPARTMENT
ASSISTANT SECRETARY'S OFFICE
WASHINGTON

September 1, 1922.

Dear Sir:

I am more pleased and complimented than I can say by your very kind invita-



William C. Culkins, Executive Secretary, Cincinnati Chamber of Commerce, Gave the Address of Welcome in Place of the Mayor. He Touched on the Benefits of all Trade Organization Work

tion, and I wish it were possible for me to accept. Unfortunately, the time mentioned is in the middle of the autumn campaign, and I shall be working on schedule. I shall have to leave Cincinnati immediately after my speech before the National Council of Traveling Salesmen to fill dates which have been made for me by the National Republican Committee.

I am particularly sorry for this, not only on account of missing the opportunity to address the Association, which I would so much like to do; but also from the fact that the invitation comes from someone in my home State. Will you tell your associates how deeply honored I am by what you have done, and express to them my sincere regrets.

Believe me, Your verys truly,
(Signed) Theodore Roosevelt.

GENERAL ELECTRIC COMPANY
120 BROADWAY, NEW YORK

September 20, 1922.

Dear Sir:

I am in receipt of your letter of the 19th instant. You were very good to have remembered our conversation, and to invite me to go to your National Convention, and to address your members, and as I told you quite spontaneously, when you asked me, I should really like to do so as I think your Association has such great opportunities for good work in the future that I would like to do whatever I can to assist in the great work that you are carrying on, but I am sorry that I am going to be away from the city that week, and it would be absolutely impossible, no matter how much I tried, to come to Cincinnati during the week from October 9th to 14th.

I hope, therefore, that you will accept my assurance of real sincerity in your work, and my great regret that I can't be with you.

Sincerely yours,
(Signed) Gerard Swope.

Constancy of Purpose

By R. J. STRITTMATTER

"The secret of success is constancy of purpose," said Disraeli. By this he implied that we must fix upon a definite purpose, and then concentrate our effort on its accomplishment.

To succeed at selling we must concentrate all of our effort on the business of selling. Constant practice at this profession, constant study as we practice, cannot help but make us better salesmen day by day. It is a mistaken idea that salesmen are born and not made.

Did you ever hear of an author, no matter how great, who could sit down and write a great book without going through the preliminary drudgery of study and privation and constant application to the business of writing?

Have you ever heard of an artist who painted a master piece without ceaselessly striving to perfect the harmonious blending of line and form and color?

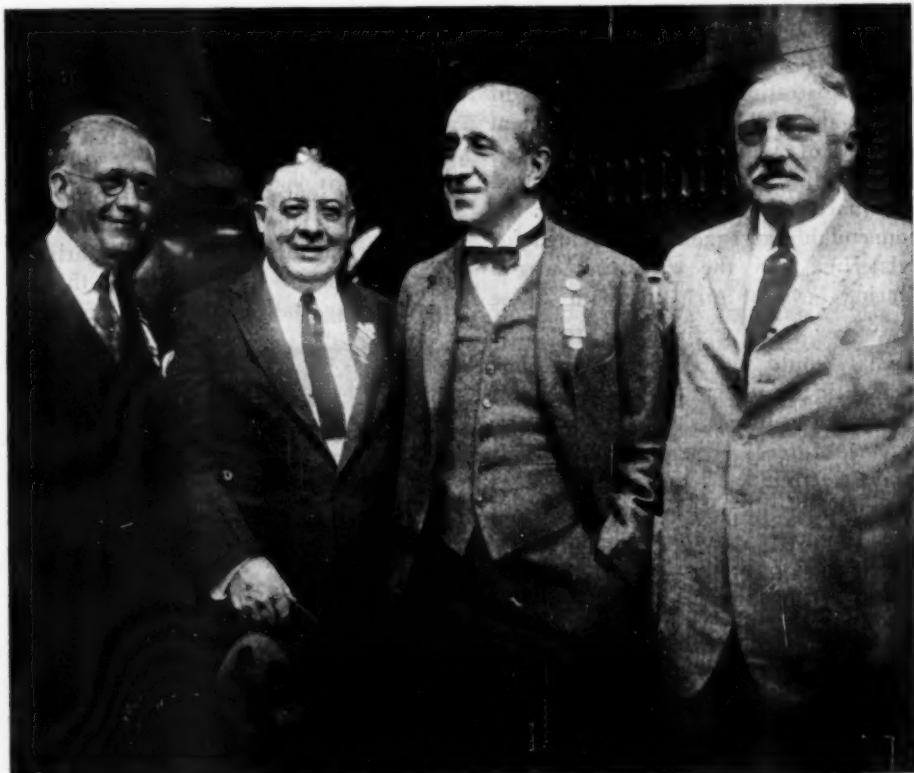
We think of them as persons mysteriously brilliant who succeed without much effort, but if you will read the biographies of these men you will find written between the lines endless hours

of toil before they succeeded at their chosen profession. And much of that toil was done without pay.

Remember that success is composed of just about 5 per cent. natural ability and 95 per cent. hard work. All the natural ability that it is possible to possess cannot take the place of work.

A salesman cannot make a sale if he never calls on a prospect. On the other hand a salesman without much natural ability who will go out and constantly apply that ability, finds the law of averages will work in his favor. In this business of selling electrical household necessities if he will inject the necessary hard work in the form of demonstrating our appliances, he will find little natural ability is required since the appliance itself if properly demonstrated will in the majority of cases sell itself.

Remember that "Constancy of Purpose" is absolutely essential to success in this business. First determine in your own mind that this is the business that you would succeed at, then stick to it, and day by day through constant practice you will improve and gradually you will climb rung by rung the appliance ladder. Eventually you will reach the top, but remember quitting in the middle will never get you to the top.



Right to Left: President Strong, Past Chairman Peet, National Councillor Stearnes, and Secretary Johnson, all of the Association of Electragists—International

Business: Yesterday, Today and Tomorrow

BY GEO. M. VERITY

President of American Rolling Mills Company Brought Out Many Important Points in Opening Address at National Convention in Cincinnati

Let me congratulate you on being engaged in a live business which deals with a truly live subject. You represent one of the greatest if not the greatest development of modern times—a development that has affected the life, happiness, and pursuits of the whole civilized world.

If you would today take from the people of the United States all the electrical inventions and applications of the past thirty years, you would immediately paralyze the whole commercial and industrial activity of the nation.

From an electric hair curler to a gigantic turbo generator the control and use of that great limitless but unseen power which we call electricity is so interwoven in the fabric of our whole economic structure that without it modern civilization could not now exist.

Taking the whole range of its development from invention to manufacture, distribution and application, the electrical industry has an invested capital of approximately one thousand million dollars, and it employs some three hundred and sixteen thousand individuals directly and many more indirectly.

It has given unlimited opportunity for invention, initiative, and the use and application of many of the arts and sciences. It is in fact so closely associated with our modern development that it would be impossible to estimate its influence on our lives or its contribution to our commercial and industrial progress.

The development of electrical apparatus has been one of the marvels of the world. It has only to make itself increasingly useful and more easily obtainable to insure its further unlimited development.

In the early days of my business life I can well remember attending one of our Cincinnati expositions at the Music Hall where the first general display of the incandescent lamp was made in the park adjoining the hall. The incandescent lamp and the other forms of electric lighting that have followed it now find their way from cottage and mine to factory and palace and to many supposedly inaccessible mountain tops.

Industry in Its Infancy

As great as has been the development of electrical science and of elec-

trical applications the industry as a whole is I am sure only in its infancy. As the electric street car ushered out the cable roads so in time will the electric locomotive displace our giant steam moguls. The railway applications that have already been made are simply demonstrations as to what can and must be done in that direction in the interest of economy and efficiency.

To introduce and apply electricity into all the world situations where it could now be used to advantage and profit would undoubtedly require a capital sum greater than the cost of

them an established high character and outstanding service to mankind, their influence will live forever.

If a commodity, be it either a manufactured article, or a service like some established form of transportation, becomes unavailable at a satisfactory cost, man contrives to find something new to take its place. Whoever or whatever becomes less valuable or useless because of excessive cost, lowered efficiency, or extreme scarcity is bound to gravitate to the discard.

The daily and yearly progress of this great electrical business will of course be influenced by the general conditions that exist in the United States and throughout the world, and its growth and prosperity will be coincident with the agricultural, financial, commercial, and industrial development of the times.

You, like all the rest of us, are therefore intensely interested in the general subject of Business Yesterday, Today and Tomorrow.

Old Methods Radically Different

We have only to look backward some fifty short years to find conditions governing business in all of its ramifications almost as radically different as is the modern motor truck from the prairie schooner of earlier days. What marvels we have witnessed in these few short years—approximately two-thirds of the lifetime of a robust man. Yesterday we wore whiskers and long cues; today we wear a smooth face and bobbed hair.

But the business methods of yesterday have certainly been trimmed even more than the tresses of our girls, and it is well that they have been else we could not hope to compete in the markets of the world in the midst of the complex world conditions in which we now find ourselves.

Yesterday was the day of the individual proprietor in commerce and industry. Under his regime a very large percentage of the workers of the world were mere employes who were hired and fired as the employer saw fit. Their main interest in work was so to handle it as to draw pay. Success or failure meant little to them. Such a thing as a spirit of coöperation had not as yet been born; and efficiency, as we know



George M. Verity

the world war. If that be true it will take much of time and will provide an ever increasing opportunity for profitable business adventure to hundreds of thousands of men and women.

You must remember, however, that in spite of the important position of applied electricity, its ultimate end and the measure of its commercial success is just as dependent on the value of the service which it renders to mankind as is that of any individual, any group, or association of individuals, for no instrument or individual no matter how valuable or able is ever found indispensable. Great men and great institutions come out into the limelight and have tremendous influence for a time, but their passing is like unto the ripples made by a pebble dropped into the sea. If, however, they leave behind

the word today, was not a part of many business programs. Nor had big business been born: Finance and commerce were strange and high sounding words.

The problem of yesterday was one of invention and development of machinery to supplant the cruder methods of the past. It was a growing problem of quantity production so as to reduce costs and bring into life a much greater demand, which in turn made for larger and better employment conditions.

Means of communication were slow and uncertain. Transportation facilities were meager and rates were high. Time and tide moved slowly with the boats on our old Miami and Erie Canal.

In the days of the pioneer it was every fellow for himself and the Indians got the straggler. That same principle dominated business throughout the early days and very largely up to some twenty-five or thirty years ago, when the dawn of a new day was first perceptible.

Yesterday the world was at war with nearly all the civilized nations at death grips with a great military power which had grown up during these same preceding thirty years. Even America, who so bitterly hates the inhumanity of war, found it necessary to contribute the bloom of its youth to that great conflict and thousands of our boys who were if necessary willing to make the supreme sacrifice are paying the more tragic price of permanent disability in our soldiers' homes and hospitals, and they are heroically facing a life of suffering.

The greatest of all human tragedies was only yesterday, but great as was its cost and its penalties, we of the United States, like all the rest of the world, do not seem as yet to be willing to profit fully by the many lessons of that great world tragedy.

But that was yesterday. And we cannot live in the past any more than can the mill run with the water that has passed.

Today—the New Era

Our great interest is centered in Today and Tomorrow—in the conditions that make for life, liberty, and the pursuits of happiness now and in the days to come.

Today all the old traditions have passed away. We are living in a new era in which life has become so complex that we must literally stick to our chart and compass if we are to keep in navigable waters.

Yesterday the electrical industry of the world was an infant; Today it is a giant.

Our great transcontinental systems of

transportation are no longer promotions. They are completed and they represent more mileage than all the nations of Europe. One of our great railway systems does more business than the railways of both England and France. If it were not for the paralysis of war and its resultant government operation and the various strikes with which operators have had to contend, our railroads would be in position today to serve commerce, agriculture, and industry very satisfactorily.

In response to the economic drift of the times, a large number of small and inefficient units in finance, commerce and industry have been replaced by larger and more efficient ones, and the inevitable drift is to still larger and stronger aggregations of capital, machinery, and equipment, and of human effort.

The United States is today the leader in quantity production. Her financial, inventive, and executive genius has startled the world in the magnitude of our operations and in the effectiveness of our work. The day of hire and fire has passed. Coöperation and coördination are now the accepted order of the day. And along with the individually owned business has come the modern corporation which make it possible for the humblest workman to obtain shares of stock in the company that gives him employment.

In modern organization human beings are no longer vassals or mere machinery or fixtures. They are men who have every opportunity to contribute all their ability to the success of the business and to prosper in proportion to what they can and do contribute.

Men in all walks of life are coming to understand that wages and profit come from production and from no other source; that strife and contention are the great enemies of production, and that discord is a most expensive instrument of destruction.

Sensible men from the ranks of both capital and labor have tried to profit by the experiences of the war, and have come to see that might is not right. Neither are the apparent victories, wrung from the strife and contention of conflicting groups, of sufficient long standing to bring a return commensurate with their cost.

Sensible men know that bargain and barter, backed by force of any kind, represent the shadow and not the substance, and that no agreement reached between associated groups is of any value unless it embodies a fair deal and results in at least a reasonable degree of satisfaction to all concerned.

Today we have become accustomed to almost instantaneous communication between all parts of the earth. Rapid transportation on land and sea, aided by cable and wireless, has brought all the world into such close contact that it is as if we were living in another world entirely different from the one we knew just a few years ago. This closer contact has brought its penalties and its responsibilities as well as its opportunities.

We are let us hope slowly but surely becoming accustomed to think and act in terms of world accomplishment instead of from a purely national standpoint, and while our trade with foreign countries is and always will be an important factor in our general prosperity, we must not forget the power we hold within ourselves and the great opportunity which we have within our own borders, for economic development.

As a growing nation of one hundred and ten million souls, our own powers of consumption, based on the civilization of the day, are past all comprehension, and our average yearly growth is a tremendous stimulus to every business that has a real service to render.

Problems of Tomorrow

While today is the only thing of which any of us is assured it is human nature to be even more interested in the problems of tomorrow.

The great problem of yesterday was production. The great need of tomorrow is efficiency in every line of human endeavor. If the economic trend of the times is to be satisfied and the best interests of our people fully advanced, we must produce in ever increasing quantities, and we must do it more efficiently.

We will be more efficient because we respect and support the higher rates of compensation for human effort that our American standards of life and living demand. We must be more efficient so that we can compete with those who, paying lower wages, cannot hope to reach our standards of efficiency because of their lower standards of living.

If enthusiasm and common sense are a combination that make for success, we have endless quantities of both in this United States, but when you add to that unlimited energy, initiative, inventive ability, and commercial sense, you have created a dynamic force which cannot be discouraged or conquered.

The world is staggering under a colossal debt which can be carried and ultimately liquidated only through the pursuits of peace. War, hideous, hellish war must be forever abolished, for if

it is not another world war will result in the annihilation of nations, if not in the destruction of civilization itself.

There must be more helpful international coöperation, as time and experience show how it can be done without causing undue international complications. There must be much of hard, conscientious work and still more of thrift and sound living if the debts of the world are to be paid.

If there ever was a time when our financial strength and integrity, as embodied in our great international financial institutions, were needed to help bring the world back to solvency and stable prosperity, that time is now. He who would cripple or destroy these established financial institutions is worse than mad.

Drawn together by modern means of communication, the prosperity of the world depends on the creation of such conditions as will enable each nation to enjoy peace and stability at home and an opportunity to dispose of its surplus products in other countries; such conditions as will encourage each one to buy from the other the things that can be bought to best advantage. A nation that believes in higher standards of living must of necessity protect a higher standard of compensation for human effort. The relation between American industry, foreign commerce, and our standards of compensation is, however, much more delicate than it was in former years. And as a result a finer balance will have to be drawn so that, while protecting the incomes of our workers we do not cut off one of the main sources of our nation's prosperity.

In the economic struggles of the future, our workers and our capitalists must stand together. Each must put into the production and distribution of things so much of earnest effort that even after paying the highest wage in the world, resultant production will be so great and quality and cost of product will be so attractive that our surplus goods will be wanted in all the markets of the world.

Europe is still staggering under the crushing load of war, but it will not always be so. The great question of reparations, complex and tragically important as it is, will one day be settled; then Europe will again settle down to work and thrift. When that day comes, the horrors of human warfare may be behind us, but we will still have to face the long drawn out and hard fought battles of a great economic war that will test our endurance, our ability,

and our patriotism to a far greater extent than did our participation in the great World War.

If we of the United States of America want to retain our commercial supremacy, with all the blessings of American standards of living, we must begin now to mobilize our forces for that great economic struggle, which is as sure to come as the night follows the day.

Efficiency, the greatest the world has ever known, and a much finer and more effective spirit of coöperation, must be the watchword of tomorrow.

If we as citizens of the United States desire to enjoy the many blessings of tomorrow through capitalizing all our most wonderful human and material resources, we must learn to work together in greater peace and unity; we must discard many of our obsolete plans governing human association; we must profit by the lessons of the past in times of both peace and war; and we must incorporate in all our human relationships such methods as have proved themselves right, sound, and effective.

Organized units of our citizenship, of whatever group or class, must cease their struggle to enforce their selfish desires. Rather must they learn the simple but oft-proved lesson that only right makes might.

If tomorrow is to bring us a realization of our hopes and our ambitions, we must remember that the economic laws of the universe are inexorable and that it is impossible for any group or aggregation of groups to legislate themselves through strife or process of law into a place where they can receive, for any great length of time, a greater rate of compensation for their efforts than that enjoyed by the workers in other comparable lines of human effort.

The operation of economic laws may be retarded, as they have been in the recent struggle in our coal mining industry, but they cannot be stopped. Compensation for human effort like water is bound to seek its level.

ing order and to adjust all human relationships on a fair and equitable basis.

In our struggle for advancement, we so often forget that in our modern life we are all necessarily dependent, each individual or each group, on the other. Transportation, fuel, food and all the necessities and luxuries of life are provided by a great organization of which each of us is simply a part.

The matter of principal importance is to keep that organization in good working order and to adjust all human rela-

tionships on a fair and equitable basis. If we want national prosperity, we must acquire an ever increasing ability to work with others coöordinately, happily, and effectively.

Greater Observance of Law

And in particular, if we want to enjoy the increased productivity and larger prosperity out of which to pay the price that progress in human affairs demands, we must all stand as one man for greater observance of law.

No civilization can hope to endure when its citizenship does not respect its own laws. While most of us are very willing to condemn the other fellow for lack of respect of some law of which he does not personally approve, all too many of us are in our own way doing exactly the same thing.

There is no use for employers to complain that workers break some law that interferes with their carrying out certain desires, when employers as individuals, indulge in lawbreaking, when some particular law or laws affect their personal habits or appetites.

We must learn that liberty does not mean license, and that civilization means restrictions of all sorts in the interest of the common good.

If our modern civilization is to endure, if our great liberty loving nation is by precept and example to have that influence over world progress that destiny seems to have decreed it should have, then we certainly must as a people acquire greater respect of law.

Furthermore over and above all ordinary law observance, if this great nation of ours, dedicated to human liberty and greater individual opportunity, is to continue to be the Land of the Free and the Home of the Brave, we must as a people old and young, support and uphold that most wonderful declaration, the greatest document ever created in the interest of humanity—*The Constitution of the United States*—which was conceived by our forefathers—men made strong in mind and heart through the great strifes and emergencies of their time.

The world of which we are an integral part, is unquestionably moving on to some new destiny. We, each of us, individually or as a part of some great commercial, industrial, or association unit are contributing something to that destiny. As to whether it shall be dissolution, as has happened to the older civilizations of the past, or the enjoyment of a higher state of civilization and a greater degree of human happiness, is our mutual responsibility.

Special Representative Davis Suggests New Activities

Report Submitted to the National Executive Committee at Cincinnati Meeting

I have just finished a ten thousand mile trip which has covered fifteen states and provinces of the west and the Canadian northwest, with visits in twenty-four important cities. This trip resulted in securing 82 new members, besides accruing the continued support of many others and greater development of local work.

I am glad to report the rapidly improving outlook in the contracting field, which has been badly demoralized for over a year, as a result of depression and the consequent influx of many new contractors from unemployed journeymen. This condition upset all of the competition clear up through the larger work, and it put into the field far too many men bidding for the available business. Such destructive competition is very discouraging to Association work, and has resulted in the breakdown of many local Associations and the loss of members to the National.

This condition is righting itself through improving business; through the shaking down of business methods, and healthy economies in operation by the better established contractors, through the gradual absorption of the poorer fitted ones; and by the realization on the part of the thinking men that only through Association can the situation be finally cleared.

It is with great pleasure that I have to report the very cordial relations now existing on the Pacific Coast towards the National work. Fine meetings were held in Seattle, Tacoma, Portland, San Francisco, Fresno, Los Angeles and San Diego, and resulted in securing the support and membership of the leaders in each of these cities, with the assurance from them that further work there would bring again a broad membership support.

I want to especially urge the attention of the National Association towards the special interests of our Canadian membership, which is rapidly growing, and which is giving us very loyal support. I believe that we will soon have strong membership in every one of the Canadian provinces.

I have not time in this report to cover in detail the many things which I feel will be of interest to the Executive Com-

mittee, but will only put them in the form of brief suggestions or recommendations.

I am convinced from my studies during the past year that there is a rapidly growing tendency to separate the contracting and merchandising branches of our business, and make them specialized professions, especially in the larger cities. I believe that this is a healthy thing and will tend towards greater efficiency.

No other one thing is more in need of adjustment than the present system of distribution of electrical appliances under the inadequate scale of discounts existing today. As a result, the smaller electric specialty stores have not attracted the keener merchandising brains, and the department stores have found their solution of the problem by going over the heads of the jobbers to the manufacturer, creating a very unhealthy difference in competitive costs between the electric specialty store equipped to give fullest electric service and other retail channels which only carry electric goods as a department of their business.

I am glad to report that the efforts of the National Association, started two years ago by our Bulletin 33, addressed to the industry, and carried on since then through our editorials in the NATIONAL ELECTRICIAN and through my own constant presentation of the facts to all branches of the industry at every opportunity, are bearing fruit. The attention of the entire industry is centering on the question today and important steps are being taken to correct it. Such attitude is indicated in the recent article of John F. Gilchrist in the September issue of *Electrical Merchandising*; and recently a representative of one of the larger national distributors told me that he hoped it would be a matter of only weeks before he could say that their line of appliances carried 40 percent discount to the dealer, or better. I believe that our efforts should be directed to securing this policy nationally and that such a discount will attract merchandising methods and brains which will revolutionize our present system of retailing.

I desire to suggest or advise the following matters for your attention:

1—That the Data Book should be at once revised as planned; in its present form it detracts from rather than aids the work of the Association.

2—That a census of our members should be taken and the character of their business shown on the membership list by symbols, as follows:

C—Contracting only.

D—Merchandising only.

C-D—Contracting Department predominates.

D-C—Merchandising Department predominates.

Res—Residence wiring important.

M—Operates Motor Repair Department.

3—That there is need for a new Department in the National Association activities which should be charged with research work, special studies and development.

The several field men to be added to our staff, and which are greatly needed to build membership at this time, should be under this department and serve as field contacts for the work.

There should also be a special investigator, preferably a trained accountant, to make special studies of business methods, overhead costs, etc.

Some of the immediate needs of this department are:

1. Collecting, analyzing and listing the successful activities of local associations, and publication of a complete hand book with constructive programs for several years' work.

2. Systematic correspondence with local association officers to keep closer contact with local work and our members' interests.

3. Study of the development of merchandising, with special attention to practical systems for servicing electrical devices.

4. Publication of all facts uncovered regarding such distribution methods and the urging of their development by the industry.

5. Education of both contractors and dealers to prepare systematic plans and specifications for developing their business.

6. Study of the residence wiring problem with efforts to direct it into improved channels, and to work out plans for successful residence wiring campaigns and co-operation with the central stations.

I wish to comment particularly upon the very valuable results in the field from two activities of your Association developed during our past year.

The Manual of Estimating I believe is one of the most important things our National Association has ever done. The effect of the use of this system by a large percentage of our membership

cannot but result in vastly improved conditions in the contracting field. As a selling argument, no other piece of work of the National has been more productive in building membership than I consider this Manual will be. I believe that an analysis of house wiring costs and the publication of a Manual for residence wiring is very greatly needed at this time.

The adoption of the registered word *Electragist* and the recent development of a trade mark embodying that word I consider very valuable assets for the Association and for the membership.

In many cities the use of the word has been extended to the classified section of the telephone directory and the listing of the responsible contractor-dealers under that name has given the public a definite assurance of how to distinguish between the better and poorer classes of contractors in our profession. Every effort should be made to establish and maintain the reputation of this trade mark.

In closing I wish to state that I feel the coming year can be made one of very great growth in national membership. Additional field men are greatly

needed to satisfactorily cover the country—at least four more men this year, one for the Eastern States and Eastern Provinces, one for the Great Lakes and Southern States, one for the Central and Mountain States and the Central Provinces, and one for the Pacific States and Western Provinces. Such a field force should add 1000 new members to the National Association next year. With the adoption of the proposed reorganization plans at this Convention provision should be made for financing these activities at once.

The Value of Specific Specifications

By E. H. EARDLEY

Chairman of Engineers Committee Presented Following Paper at Annual Convention of National Association

When this subject was mentioned to me, I at first thought that it was of trifling importance and wondered just what should or could be said to interest the members of our organization in it. But upon second thought the matter unfolded into such a large subject and of such worth that I shank from the task feeling it worthy of a more capable mind and ready tongue. During the twenty minutes allotted to me I can only hope to touch the high spots here and there, leaving the matter to be developed as the months shall come and go and so terminate after more mature deliberation.

I am convinced that a legion of contractors will be everlastingly grateful to this body of men, if they can bring about a more definite workable set of specifications which shall apply on future electrical construction.

As Essential As Blueprints

Specific or definite specifications as I like to term them to the electrical contractor are as essential as a blueprint is to the mason without which he is always at a loss and cannot proceed intelligently with his work.

Strange to say it seldom happens that when a job of any size has a well devised set of specifications, there is sure to be one or more essentials so stated that a Philadelphia lawyer could not interpret them. The whole of the electrical story is not told. Illustrated by the following fashion:

The intent of these specifications along with the plans submitted is to cover the complete electrical installation, fixtures, switches, telephones, cutout, cabinet, main service wires, receptacles, cooking and power wiring, etc. All work shall be done

in accordance with the latest rules and regulations of the Board of Fire Underwriters and City Ordinances covering such installations and shall also be acceptable to the power company supplying electrical energy to the building.

Following there is generally an elaborate exposition of the Code rules such as:

The wire shall have a conductivity of 98 percent, etc. Conduit shall be effectively grounded and not more than so many bends shall be made between outlet or junction boxes, and no wires shall be spliced in the conduits. All joints shall be soldered and double taped and then treated. Not more than 660 watts shall be on one continuous circuit and yet the plans may show, if it happens to be one of the plans that has the wattage marked at the outlet, four or five 200 watt outlets controlled from one wall switch.

You all know the story. After three or four pages of elaboration of the Code, we then come to the real specifications as far as concerns the electrical contractor.

Service wires shall enter at the front or rear of the building as designated by the power company and from this location run conduits to main switch board in basement, from this point run branch circuits to the various cabinets. Sometimes the cabinets are shown on the plans and sometimes they are not. Very seldom is the number of circuits in each cabinet stated.

Run wires from the main switch board to the fan room for fan motor. Get the size of the motor from the plumbing or ventilating contractor. Switches shall be flush type with the same finish as the hardware.

Architect Clears Himself

Again it is seldom that the type of cabinet, the number of branch circuits, main circuits, switches type and size are clearly stated, but believe me the architect always fortifies himself with the proviso that should anything not be clear or not mentioned that is necessary

to make a complete job in every respect, the contractor shall provide it at no additional cost.

Very often, almost always there arise conditions unlooked for on nearly every job which call for some additional work on the part of the electrical man, which he performs at a loss to himself owing to the indefinite specifications applying to that work.

The electrical contractor has also to contend with other conditions—to illustrate, the following: The electrical contractor shall allow the — sum of dollars for the electrical lighting fixtures in his contract (bait if you please) to tempt him to cut low in the fond anticipation of, while not figuring much profit on the wiring and not much on the fixtures, the complete job being so large, of course he can do it for less. But! when the time comes to buy fixtures, his competitor steps in and with a similar line of reasoning, secures the contract for the fixtures, and then trouble begins. This practice to my mind is unfair, and should be discontinued.

Cottage Wiring Important

I have not referred to cottage wiring, but one transaction will illustrate the point. The customer comes in and says: "I would like to see some electrical fixtures for my new home."

Perhaps we are successful in making the sale. Assume that we are. The fixtures are all selected and the time for installation arranged for, and then: "How about the wall switches, are they all installed?"

"No the switches are not installed."

I think the man who did the wiring is going to put them in."

"Very well then. Thank you very much. Good day."

The fixtures are installed Friday. Friday afternoon the telephone rings and a voice comes over the wire:

"The man who wired the house says that the switches are not in his contract, and we must have light tomorrow sure."

"We will be very pleased to put the switches in. Our electrician will be right down. Just a minute—our man reports that the switch to cut the power off the house is not in, nor is the branch blocks."

Then we have to explain what a branch block is.

"Well," he says, "I will call the man who wired the house and tell him to get this job done."

Have Everything Right

We do not send our man down to put in the wall switches until we are sure the entrance switch, branch blocks and perhaps the range switch are installed by the man who wired the house, because all this work can be done at the same time.

Finally we get the job done, the connection is made and the customer has the light. But! Is he satisfied, does he feel good towards the electric man? He does not, and loses no opportunity to say hard things about him and the craft in general. Especially when he gets his bill for the extras. These cases do not lend themselves to the best interest of the business, they retard, hinder and undo much that should otherwise expand our business.

Judge the Deal

Assuming now that the customer, the architect and the general contractor are all satisfied the controversy ended and all but the money collected, has it been a good deal to all parties concerned? Has the contractor made his proverbial 10 per cent or does he wish over and over again that he had not seen the job? Is his mental condition such that he goes happily on his way to the next job? Does he feel that he's engaged in the foremost business of the age, and look upon life with optimism and satisfaction? Does he have zest for the various responsibilities that devolve upon him?

No, for the result of such cases (traced directly to the lack of indefinitely stating what was required) produces an indifferent attitude on the part of the contractor and offsets much of

that tangible or intangible thing called goodwill—the thing for which most of our effort goes. Not only this, but it produces unfair and absolutely dishonest bidding in some cases—two things which our International Association does not stand for.

Nucleus On Which to Build

As a field for reflection and as a basis to work on, in order to secure a uniformity throughout the country of definite and complete specifications, I strongly recommend the following as an outline or nucleus on which can be built a standard specification governing electrical installations:

First: The electrical specifications shall be distinct and separate from the general specifications and prepared by a person or persons fully qualified. Leagues are starting to do this very thing.

Second: The scope of the work covered by the plans and specifications shall be clearly and definitely stated, complete in every detail.

Third: The character and quality of the materials shall be definitely stated, leaving no doubt concerning them. Only materials nationally known to be specified.

Fourth: The standard symbols for wiring shall be strictly adhered to and as far as possible the proper wattage, based on illuminating data shall be stated for lighting outlets. The wattage of all power and special circuits shall be clearly given. The horse power of motors shall at least be shown on the plans and the voltage and kind of service, A. C. or D. C., single or two or three phase shall be specified.

Fifth: Elaboration of the Code shall be omitted from all specifications. The words: "All work to be done according to the rules and regulations of the Board of Fire Underwriters and the electrical ordinances of local governing bodies"—shall be sufficient.

The elaboration of the Code is a reflection on the intelligence of the electrical contractor. The more direct and concise the specifications can be made the better and the less liable of misinterpretation. As a suggestion I offer the following as one way of obtaining more definite and complete specifications:

How It Can Be Done

The local associations shall work with the architects in their localities for the selection of a progressive wideawake electrical man, fully qualified through study and actual experience in electrical construction and installation, one who appreciates the advantage of convenience outlets for every purpose and the use of electrical equipment in the household and in the industries, and this engineer shall be employed directly by the architects without affiliation in any way with the electrical contractors or local bureau of mechanical inspection,

to draw the plans and write the specifications for all electrical work for architects, contractors, and owners.

To this end shall the International Association work with the American Institute of Architects, the Institute of Electrical Engineers, and illuminating societies and the Society for Electrical Development and broadcast its work through the official magazine.

Local Advertising Tie In

Recently two electrical men in different parts of the country furnished very striking examples of how to tie in with a manufacturer's national advertising actively, and get correspondingly bigger results for themselves.

George O. Rolfe, who by the way showed real advertising sense when he named his store in Chico, California, "The Good Housekeeping Electrical Shop"—like all the other dealers in Royal electric cleaners, received advance notice a while ago of a double page Saturday Evening Post advertisement.

"Fine," said Rolfe, and called up the local news dealer, inquired the circulation of the Post, and promptly bought up the entire issue, 350 copies in all, for the date when this advertising was to appear. The news dealer, when the week came, referred all who inquired for Saturday Evening Posts to Mr. Rolfe to get their magazine free. Across the cover of each copy was stamped in large letters, "Compliments of The Good Housekeeping Electrical Shop. Please refer to page 51." The Post reader received with his magazine a Royal folder, and a little sales talk on the machine. The stunt netted Rolfe some very good prospects.

The same Saturday Evening Post advertising inspired a Kokomo, Indiana, salesman with another clever idea. R. R. Dieden of that town arranged with the news distributor to stamp all copies carrying the Royal advertising with a neat inscription to the effect that the Royal is sold by the Carter Electric Company of Kokomo. The issues of the Post were given due prominence in the dealer's window and shop—and the results are apparent in the increased number of live prospects.

In both these cases, the national advertising was localized. These dealers extracted the maximum of value from it because they pitched in and made maximum use of it. Their effective tie in with the manufacturer's reputation netted them both prestige and sales.

How an Employers' Association Functions

By COL. EDWARD T. MILLER

Secretary United Typothetae of America Explains
History of Group Development Before Convention

Since the time when the Euphrates first reflected camp fires of the sons of Adam, man has organized. By nature a social being, he found goodfellowship in the company of others. He discovered strength in numbers, whether for defense or offense, whether in co-operative effort or competitive conflict. As the centuries have measured off the marks of time, human nature has not changed except to gather a higher inspiration. Today man employs all that has served him so well on his progressive way, but having seen the greater significance of coöperative effort, now stresses service to others as the fundamental of all organization.

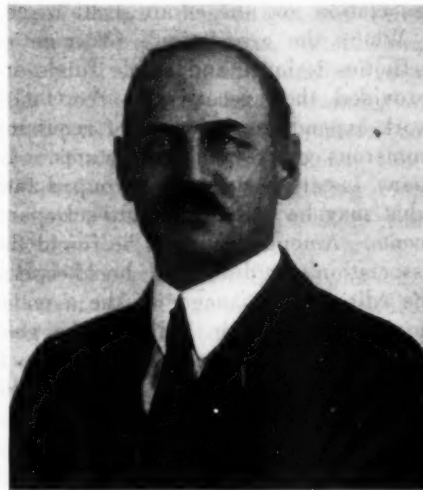
Business is as old as human history. It began when the first lamb was bartered for a measure of millet; when the first loaf of bread was sold for a penny. Ancient records tell us there were organizations of bakers and coppersmiths back in the ages when the race was still in its cradle. Later on even the Dark Ages did not crush out the spirit of coöperative effort and as the darkness began to roll away, the Merchant Guilds of Europe appeared to aid business and industry forward during a half dozen centuries. Early last century the Pools appeared, only to be superseded by the Modern Employers' Association. And so in one almost unbroken path since the dawn of history, human organization has been serving human needs.

During the last fifty years employers' associations have obtained their greatest efficiency and their highest usefulness. As almost every commercial and industrial endeavor has employed them to good purpose, it is but natural they have assumed a number of different types: Commercial associations, made up of business and industrial concerns of all kinds and best described by our Chambers of Commerce, Boards of Trade and similar bodies; Manufacturers' associations, composed only of all classes of producers; Labor associations, opposing union domination or fostering the open shop; Credit associations (largely local), collecting and disseminating credit information; and Trade or Industrial associations, confining their work to one trade or one industry. Since the association whose

annual convention I have the honor to address is in the last named class, I have elected to confine my description of "How an Employers' Association Functions" to the functioning of a modern trade association.

Trade Association Functions

It is interesting to note that the first of these modern employers' associations of national extent appeared in the United States in 1862. During the next thirty-five years seven others appeared,



Colonel Edward T. Miller

all of which are still in existence and serving their members effectively. Since the beginning of the present century the number has grown very rapidly until today there have been reported and classified by the U. S. Chamber of Commerce and the U. S. Department of Commerce over 2000 employers' associations.

The World War created conditions that gave impetus to employer organizations. There was no time for competition; the nation had to be mobilized for coöperative effort. National economy and conservation of energy and material were the watchwords. This called at once for simplification and standardization; diminution of styles, patterns and models; research for new materials and improvement of processes; and the greater employment of science in business. Loyalty was put before selfishness; industry responded and came forth a giant into the light of a new economic day.

Industry itself has diagnosed its own ailments. It has found monopoly and

monopolistic practices are not the panacea for its ills; that in a country whose economic structure is competition, monopoly must have no place. But industry itself has found two competitions—one ruinous, the other intelligent; the one resting in the mire of ignorance, prejudice, selfishness, hatred, suspicion and besmirched with bad practices, dishonesty and criminality; the other towering from the rock of knowledge, science, high ethics and the Golden Rule.

Industry has discovered its own needs, its own deficiencies, its own wastes, its own opportunities for service to itself and to mankind. In a foreword to the report on the "Elimination of Waste in Industry" of the Committee of the Federated American Engineering Societies, Herbert Hoover summarizes industries' needs in the following powerful paragraph:

We have probably the highest ingenuity and efficiency in the operation of our industries of any nation. Yet our industrial machine is far from perfect. The wastes of unemployment during depressions; from speculation and over-production in booms; from labor turnover; from labor conflicts; from intermittent failure of transportation of supplies of fuel and power; from excessive seasonal operations; from lack of standardization; from loss in our processes and materials—all combine to represent a huge deduction from the goods and services that we might all enjoy if we could do a better job of it.

What a tremendous challenge to the Trade Associations of America! Not one industry but is affected by these wastes. Only by coöperative effort can they be eliminated. The trade associations which are naturally and by right the custodians and guardians of their industries' future prosperity, must rally to such a challenge. Only insofar as they do respond and create and maintain the service that are to change these conditions can they live up to their fullest opportunities and justify their existence as entities in the nations' economic structure.

And so, gentlemen our task is before us. How shall we set about to accomplish it? Only by the most systematic and comprehensive organization of ourselves by industries, with definite objects in view, with quickened vision of the future, with full sense of our obligations and responsibilities to our in-

dustries, and with a willingness to sacrifice sufficient of our interest, our time and our substance, shall we ever accomplish what is expected of us and render that service to ourselves and to mankind our civilization has a right to expect.

Organization of a Trade Association

It hardly seems necessary in addressing an association which has already accomplished so much, to do more than hastily sketch the interior organization and control of an effective trade association; yet I believe there are a number of fundamentals to which reference should be made and which should not be lost sight of. By their very nature trade associations are and should be democratic. The members rule. They are supreme in the matter of policies; they determine the scope of the association's activities and services. Thus arises at once the tremendous importance of the annual convention. It is the legislative body of the association, providing ways and means, defining policies, outlining operations for the ensuing year and selecting the administration that is to consummate its objects. In addition to his rights in that legislative body, every member has the responsibility of abiding by its decisions, the obligation of attending either in person or by delegates uniting with his fellow members in mutual effort to meet the problems that confront them.

The officers and committees embody the administrative function. When carefully selected as to fitness for their respective positions and to interest in and enthusiasm for associational work, they become a tremendous power toward furthering the organization's objects. The standing and special committees may make themselves of inestimable value by studying carefully and fully every phase of the work assigned to them, thus more or less as experts, being able to counsel and advise the administrative and executive officers.

In most modern trade associations the executive function is vested in the secretary or manager, an employed executive. As a body, these men constitute a special profession, actuated by the highest ethics. Either by training or experience they have acquired a knowledge of the philosophy of trade association and the psychology actuating the membership. While a secretary should never mix in the politics of his association, he should never hesitate to bring before the convention or the administration in a proper manner constructive suggestions for and criti-

cisms of policy measures. He is entitled to the confidence of his membership and should be given full power as an executive to carry out the instructions of the administration under the general policies laid down by the convention. It is his business to make surveys from time to time to determine definite conditions in the industry and in the association and to discover their needs; to take necessary action to meet the needs whenever general provision has been made, or in the absence of such provision to lay the facts before the administration for action. The secretary or manager is considerably more than a clerk; he is capable of assuming the responsibilities of management and when such are placed upon him he should be backed to the limit by the association and the administration.

Where the association's program of activities is large and ample funds are provided the executive or secretarial work expands to the point of requiring numerous clerks and assistants. In many instances these are grouped into what may be termed Executive Departments. Among them will be found the association's auditor and bookkeepers, the editor and manager of the association's periodical or bulletin, the general office manager and clerks, and such others as come immediately under the direction of the executive and are engaged in the general administrative work of the association. In very small associations and in those operating within prescribed limitation, the executive will necessarily have to perform certain commercial, engineering, and educational services, but as the work expands in response to associational needs, these functions must be definitely assigned to specific Service Departments organized under competent assistant secretaries or directors, all being coördinated under the general supervision and direction of the secretary or manager.

These service departments are generally created as the natural evolution of associational services; there is no fixed rule as to what departments should be set up first or in what order the others should follow; nor is there any decree as to exactly what service departments should be established. The aims of the association and the needs of the membership determine all this, but it is interesting to observe what service departments are being successfully operated by other associations. Early this year the National Association of Manufacturers made a study of national trade associations. "A bare

majority—51 percent—have organized their activities under at least a few definite departments with salaried chiefs," says this report. "The others adhere to the older method of working through committees of volunteers. The tendency seems to be in the former direction."

Kinds of Service Rendered

As to the question, "What kind of service has an industry the right to demand of its trade association?" The answer is not forthcoming until there is an understanding of the nature of the businesses which go to make up an industry. Industrial engineers are practically all agreed that every business is capable of being divided into three grand divisions: (1) Administration and Finance, (2) Production, (3) Sales and Distributions.

Each of these divisions is constantly presenting problems whose solutions more easily arrived at when the experience of others in similar situations is known. The trade association is the natural and most practical clearing house for such experience. Hence the functions of the trade association are to serve its members by supplying the information or service that will enable them to meet every problem that arises in their business. By their very nature these functions assume three general classes: (1) Business or Commercial; (2) Engineering or Industrial; (3) Educational. It is difficult at times to properly classify some functions because of overlapping but it is well to keep the lines of demarcation as clearly drawn as possible.

Let us study for a moment the manner in which the commercial functions of a trade association may be employed to meet the problems of administration, production and sales and help the member improve conditions in these three respects. I should say that the collection by a trade association and dissemination to the membership of information regarding credits, costs, production, sources of raw material, conditions of trade, available money, inventories of raw and manufactured goods would be a direct commercial service to any individual business administration of great value to it in planning its commercial movements and determining its business policies; similarly, that passing on to the production departments of such member information respecting the rates of production in the processes it employs, the costs of individual operations, the market price of raw materials, the available supply, the available transportation, the rela-

tions of the employer and employes, of the labor market and so on, would be a commercial service that would have a direct bearing on the production problems of that member; and again when the sales and distribution end of a member's business is furnished by his trade association with reliable information concerning the conditions of the market for his finished products, the appearance of new competitive products, the facilities for distribution, and is given the benefits of associational collective or industrial advertising, the sales and distribution division is receiving a direct commercial service measured in real dollars.

Commercial and Educational Functions

It is next to impossible in a treatise so brief as this to even list the Commercial or Business functions of a trade association. They are as numerous and as varied as the service departments created to perform them, and as the objects and aims of trade associations themselves. Briefly they may be described as the functions of collecting, by research and otherwise, and disseminating to the members every conceivable class and kind of information that will be helpful in every department and phase of their businesses.

In the second group of functions, the Engineering or Industrial, the trade association employs science in all its ramifications. This field of work is as yet considerably undeveloped, but it promises the greatest opportunity for trade association in the future. For a brief time there will be some competition with the so-called professional industrial engineers, but only for a brief time, provided the trade associations live up to their greatest and highest opportunity by giving to their memberships the specific kind and quality and diversity of engineering best suited to their industries' needs. Trade associations are in a position to demand that engineering principles be so applied as to fit the engineering needs of their industries and reject the pet methods which some engineers attempt to foist upon one industry regardless of their fitness because they were able to make them work in some other. The inherent principle of coöperation in trade associations makes possible a specialization in engineering to fit the needs of specific industries and greatly reduces the cost to the membership.

The Educational functions of a trade association are most important. They

are fundamentally vital to the perpetuation of an industry, more so today than ever before, and will be infinitely more so tomorrow than today. The trade association that has not caught the vision of a better educated personnel in its industry is blind to the opportunities of a more prosperous future. The competition of tomorrow will be the keenest the world has ever known. We can best prepare to meet it by educating both academically and vocationally all whom we are to employ in the paths of industry.

Many trade associations are already far advanced in this work and through employment of their educational functions are magnificently supplementing their Commercial and Engineering functions in improving conditions in administration, production and sales, by compiling textbooks, establishing courses of study, and founding vocational schools for better training of executives, accountants, estimators, engineers, superintendents, foremen, journeymen, apprentices, advertising men, salesmen, and all in any manner connected with industry.

Here is a great field for associational endeavor which promises rich rewards a dozen years hence. The work has a strong appeal to the members, calls for the best thought of industrial leaders, challenges the radicals among the employed, attracts youthful recruits and makes toward a happier and more contented citizenry. Education in industry will raise the standards of production and of products will increase the material blessings of mankind, and will promote the prosperity of the individual and of the nation.

Opportunities and Responsibilities

I have outlined above the place in our country's economic fabric occupied by the modern trade association, calling particular attention to its natural rise from less favorable forms of organization, to its interior organization and management, and to its three main groups of functions. I shall now refer briefly to the future opportunities and responsibilities of trade associations. There are before us the opportunities of future problems and the opportunities of new inventions. The committee of the Federated American Engineering Societies reports that "Waste in Industry is attributable to (1) Low production caused by faulty management of materials, plant, equipment and men; (2) Interrupted production, caused by idle men, idle material, idle

plants, idle equipment; (3) Restricted production intentionally caused by owners, management or labor; (4) Lost production caused by ill health, physical defects and industrial accidents." These are some of the problem-opportunities immediately facing most industries. Insofar as they affect any one industry, it is within the province of its trade association to undertake their elimination.

Then there are the opportunities of new invention. In the field of electricity, the miracle-maker of the century, the opportunities are growing more rapidly than the supply of skill and knowledge. Each new invention measures another pace in progress. An invention may make or break an industry. Industry must keep step with progress. The trade association is the one monitor to compel industry to grasp the unfolding opportunities and help it develop new blessings for mankind.

It has been said that business is the organized means of serving human needs. The trade association is the organized means of serving business. As business meets human needs, so the trade association must meet business needs. It has a definite responsibility to business, to industry, to the workers in industry, to industry's own future existence, to the great public whom it serves, even to that great Kingdom of the Spirit towards which the world must needs move. America's trade associations under the banner of industrial ethics, marching to the harmonies of coöperative effort, hurling the thunderbolts of science, and bearing the shield of knowledge will win peace and prosperity for mankind, and in thus serving man will perform an even greater service to the Master Workman of the Universe.

Telephone Diplomacy

Distance bids fair to disappear so far as ease of communication goes. The other night when a government official had gone to bed his telephone rang. When he turned out and went to the persistent instrument he found on the other end of the wire a government representative in a foreign country who from his post of duty proceeded by word of mouth to deliver a message of commercial importance.

When things reach the point that an official in Washington converses with all of his assistants, wherever they may be, things are going to be pretty lively for the Washington executive.

Electrify America--Getting the Job Done

By F. M. FEIKER

As McGraw-Hill Vice President Was Unable to be Present at
National Convention His Paper Was Read by O. H. Caldwell

I believe that the industry is starting on an increase in business both in the field of residence construction and industrial electrification.

I believe the trend in the industry to develop local organization effort in carrying out national plans is especially to be commended. During the last six years I have been present at many meetings. It is part of the job of a man in the publishing business to keep in contact with what is going on in all branches of the industry. Last year, in addition, I had an unusual opportunity to look at the industry from the outside as Assistant to Mr. Hoover in the Department of Commerce.

Two big facts stand out of this experience. First we are wonderfully organized nationally as an electrical industry, and second we function very badly locally. It has always been a hobby of mine that "business comes to the man who goes after it." I do not believe that because a man is named a contractor-dealer or an electragerist or a central station operator or a jobber, being such by name entitles him to anything. What entitles him to business is his own individual effort and work.

When I was in the Department of Commerce, I was very much impressed by the fact that the electrical organization is far better organized than any other industry. The experience of the War Industries Board also pointed out that the electrical industry was especially well organized. Indeed during the time of the War Industries Board, the electrical industry was set up as an example of good industry organization.

My own experience in Washington gave me the same opinion. It is always possible to get any broad idea before the different groups of men in the electrical industry through the various organizations that make it up.

Organization Needs Leadership

But because we are very highly organized, I believe that we often take for granted that the mere organization gets results.

Organization will not get results without leadership, and organization with leadership will not get results in terms of business unless it is interpreted to meet the local business situation of a community.

During the last two or three weeks,

some definite progress has been made in developing local activity. At Buffalo, under the leadership of W. E. Robertson, of the Robertson-Cataract Electric Company, a local meeting was staged for some six hundred men from Western New York. The big thing about this meeting to me was the fact that I knew but few men there. I was surprised at first that I knew so few, because in attending conventions during the last six or seven years, I have come to have a wide circle of acquaintances. But the reason soon developed, namely, that the men who were present were jobbers, central station salesmen, contractor-dealers, jobbers' salesmen, and manufacturers' representatives in that territory, very few of whom ordinarily attend national conventions.

This local meeting was the first which has been promoted under the auspices of the joint committee for business development, which is made up of representatives from the different section of the industry.

A few weeks before, at Association Island, I attended a meeting of representatives of local leagues held under the auspices of the Society for Electrical Development. This meeting was called to arouse interest in the problems of the local league, and to emphasize the need of local organization to get something done. In my opinion it was a definite success. It brought together for the first time the representatives of the local leagues and afforded them an opportunity to talk over their problems.

Out of these two meetings three definite points stand out in my mind which I would have liked to speak about more at length before your meeting. First that national organizations are useful principally in arousing individuals to certain opportunities for local action. Second that the local action may be started by any wideawake electrical man, whether he is a representative of the manufacturer locally, or is a jobber, or a contractor-dealer, or a central station man. Third that it is essential that the central station man be a part of this local development, and fourth that local development should be financed by the local men.

Ways of Development

There are several very practical ways to get such a local electrical develop-

ment started. One is to interest local people in the development of the Electrical Home idea, about which so much has been written during the last year and a half. A second idea is the Co-operative Advertising plan in the newspapers. A third idea that has been found useful in local campaigns is an Advisory Wiring Service.

Ask for Information

These three ways to coöperate locally to practical advantage are only samples, and any one who wants to start something may get information on how to do it from the Society of Electrical Development and from the Joint Committee on Business Development. Moreover the practical ideas that are being used in different towns for carrying out plans for getting business will be found in the journals of the industry.

Again let me express my regret in not being able to be present at this meeting. I am the loser, because I never attend a meeting of electrical men without getting more than I give. If we set ourselves definite individual standards of accomplishment for this next year in terms of business, I know that the opportunity for business is there, and accomplishment will not be measured by debate about the difficulties, but by going out and putting into practice locally some of the big national ideas.

Your Wiring Jobs

"Your wiring jobs, whether new or old homes are concerned, can be used to great advantage as an easy means for making appliance sales," according to a recent issue of *Nelectragrams*, O. Fred Rost's unique news sheet of the Newark Electrical Supply Company, Newark, N. J. The bulletin continues:

Those who move into newly built houses but previously had electric light will need extra lamps, and no doubt could be interested in buying additional electrical appliances. Wiring an old house means a sure sale of an electric iron and a vacuum cleaner to every family in the house providing you are on the job. Look over your books and see how many sales you have missed by not using your wiring jobs to build up appliance sales, and then beginning with tomorrow get that business which is at your fingertips.

The Manual of Estimating

By ARTHUR L. ABBOTT

What It is and How and Why It Came into Being is Explained
by Chairman of Cost Data Committee at Cincinnati Convention

It has long been realized by all who have given much thought to the subject that the estimating of electrical construction work has been in a very chaotic state, and that this condition has been the cause of great losses to the industry aggregating many hundreds of thousands of dollars annually.

Many contractors have believed that bids could be kept up to a reasonable level by means of some plan of price fixing but attempts to do this have uniformly proven unsuccessful. The only possibility of remedying conditions seems to lie in the general dissemination of a knowledge of better methods of estimating.

This subject was first brought before this association in a report presented at the New Orleans convention five years ago by a committee of which Harry C. Turnock of Cleveland was the chairman. This report was followed a year later by the valuable paper read by John R. Smith, representing the Chicago Electrical Estimators' Association. Early in the year 1920 a standing committee was appointed having in charge the general investigation of the subject. At the meeting of the National Executive Committee held last March, the cost data committee reported on a plan to publish a Manual of Estimating. The Executive Committee urged that we proceed with this work as rapidly as possible. The Manual has therefore been published and is now in the hands of the membership.

It is the intention that the Manual shall serve both as a textbook for the instruction of beginners and as a guide to better practice for experienced estimators. It has several times been proposed that the National Association should carry on some form of instruction in estimating, and I know of no work which could be taken up by the Association which would have a more practical value; but this idea has not heretofore been feasible because we have had no textbook and no standardized system of estimating. Educational work of this nature will now be possible.

While older methods of estimating have been used with success by experienced men, no real system and no complete and definite data have been in

existence. The estimator has always relied to a very great extent upon his own judgment; in fact learning to be an estimator has in the past consisted chiefly in the cultivation of the learner's judgment, which is a slow process, together with the acquisition of a certain degree of skill in juggling certain mystical figures supposed to represent labor cost data. The alert contractor who is constantly striving to keep up with the best methods in modern business management will welcome a system which insures uniformity in all estimates made in his office regardless of the years of training the estimator may have had, and which makes possible the supervision and checking of all estimators by one responsible man. When working with a standardized system, two men can easily work together on a large important job, dividing the work and checking one another.

It is considered essential to the practical success of an estimating system that actual facts be closely adhered to, that all methods be logical, and that methods and data be stated very definitely. The older systems will not pass inspection because they do not adhere to the facts, they are illogical and indefinite. Observance of these fundamental requirements involve first of all a careful analysis of the typical job. The first step is the division of labor into the most important classes of operations as follows:

1. Lighting branch circuit conduit work.
2. Feeder and Motor Circuit conduit work.
3. Small wire.
4. Large wire.
5. Cabinets and panel boards.
6. Switches and plug receptacles.

These items are covered in the Manual. There are many more which are not covered and which will have to be added before the book will be complete.

It is well understood that the hours of labor required per operation is not necessarily a constant quantity but varies within wide limits on jobs having different characteristics. Thus the installation of an outlet box has been commonly considered as one operation, and it is a matter of common knowledge that the labor on this so-called operation is a variable quantity, having quite dif-

ferent values on different jobs. An examination of the facts shows that there are two causes of these variations: (a) differences in the *actual work done*; and (b) differences in the *conditions* under which the work is done. Therefore in order that we may be enabled to estimate the labor closely for a given job it is necessary that we first predetermine both the actual work involved in each operation and the conditions under which this work is done. The outline sheet presented herewith indicates roughly the analysis made of each class of work along these lines.

Branch circuit pipe work being the most important item has received first attention. The variations in the *actual work done* on pipe and boxes are taken care of by adhering closely to the facts and figuring labor, not on pipe and boxes only but on pipe, boxes, and pipe entrances to boxes; and by making use of tabulated values of labor units applying to all common forms of building construction. Variations in labor costs due to differences in the *condition* under which the work is done are taken care of by adding a percentage to each of the tabulated labor units to adapt them to the job in question; in other words, for each job a certain factor is computed, by which the labor units are multiplied, this factor always being greater than one. This factor is computed for each job by adding together three figures taken from three tables. This method is purely empirical and not in any way capable of mathematical demonstration, nevertheless it gives surprisingly good results. The general use of this method will result in its gradual improvement.

In the case of large pipe, all operations performed are accounted for by four time allowances: hours per 100 feet of pipe, hours per elbow, hours per terminal, and hours per bend. It is entirely practical to ascertain the number of terminals and number of bends included in a given run of pipe at the same time that the feet of pipe and number of elbows is taken off. Here again the advantage can be seen of keeping close to the actual facts. Consider two runs of 2½" pipe each 100 ft. long; one is a continuous length of

pipe, while the other is broken into 7 short lengths by passing through cabinets or pull boxes. The old method of using a flat rate per 100 ft. of pipe would make the labor the same in each case, according to one compilation of labor data this would be 30.8 hours. Figured according to the Manual we get 10.4 hours for the first case, and 26.6 hours for the second, or 16.2 hours more in the second case than in the first.

The labor on pulling in wire has not yet been carefully studied. For No. 14 and No. 12 used for branch circuit work, the labor will depend upon the complexity of the layout. Limiting values are given, applying to the most simple and the most complex jobs. A study of the variable factors involved in pulling in large wire indicates that no accurate method of estimating the labor can be worked out which will be practical. In the method given in the Manual, we use a time allowance per 1000 ft. plus an additional time allowance per run. This results in a total charge per 1000 ft. which decreases as the length of the run increases, and more nearly approximates correct results than the use of a flat charge per 1000 ft.

Cabinet and panel board labor is computed from the number of terminals of each size on the panel, this being the only practical method. There is little variation in either the operation itself or in the conditions under which the work is done, hence a flat time allowance appears to be all that is required.

The labor data contained in the Manual has been drawn from all available sources. Some of it is old data, somewhat changed in form; some of it is the result of original investigation. It might be said that the whole Manual is the result of an effort to take previously existing data and methods and make them definite and systematic instead of the opposite.

All labor data is stated in terms of time rather than in dollars and cents, for obvious reasons. It has been suggested that there is some advantage in entering the unit hours per operation on the estimate sheet and making all extensions and footings in terms of hours, and then multiplying the total hours for the entire job by the average wage rate per hour. The writer believes this to be the best method. The data is not guaranteed to be absolutely accurate, but a three year trial seems to prove that it will give very reliable results.

Data should be compiled on many

operations not covered in this first edition of the Manual; none of the operations which are covered have been completely investigated, some have had only a small amount of attention. In order to check both the data and the methods of the Manual, the Cost Record System, published last year, should be applied on a considerable number of jobs. A large amount of investigation should be carried on, in the way of special time studies and studies to dig out the facts contained in reports from contractors who have made use of the Cost Record System. All matter now included in the Manual should be given much study, and its scope should be greatly extended. The work will be carried on by the committee as rapidly as possible, but will necessarily proceed slowly if the committee continues to depend entirely upon its own efforts. A plan has been worked out whereby it is believed that satisfactory progress can be made by employing a firm of industrial engineers to carry on the work at an annual expense of \$3000. The Association can afford to make this expenditure, and such an appropriation will undoubtedly be made provided there seems to be a general demand from the membership for such action. Therefore if you feel that this work has a real value to the industry, find some means of bringing your ideas to the attention of the National Executive Committee so that they may learn what action is desired by the membership.

Suggestions Are Welcome

Our work will be criticized; that is to be expected and very much to be desired. Intelligent criticism will be a great help in improving the Manual and extending its usefulness. The point cannot be too strongly emphasized that the Manual is not issued as a complete and finished product; on the contrary, it is believed that the general adoption and use of the Manual will, by focusing attention on one standardized system, draw out constructive criticism which will eventually enable us to perfect the methods and data. The committee will at all times endeavor to be open minded and will give serious consideration to all ideas presented. The suggestion is made that before offering your criticism, the text should be read carefully and at least one complete estimate should be made according to the methods outlined. The methods will no doubt be chiefly criticized as too complicated. It is true that some small degree of complexity has been introduced, but no more than

seems to be absolutely necessary. The time honored method of weighing the blueprints and figuring the entire job at so much per ounce is the last word in simplicity, but is not recommended by experts for general use.

Power in the Home

One Badger farmer, says the Milwaukee Journal, who has a keen sense of justice, declares that one of the standard puzzles that he has never been able to solve is why some farmers favor machinery on the farm fields and none in the home. He declares that not 10 percent of the farmers in this neighborhood have washing machines, while 100 percent of them have self binders, mowers, hay loaders, hay forks, and every one of the machines made to lighten the work of the soil.

Our enraged farmer works it out something like this:

"Just let any farmer do one washing, stand over the board at this back-breaking job, rub all forenoon and all afternoon and he would pass a unanimous vote that the washing machine must be installed before next wash day."

Our farmer has another way of stating it: "When it comes to using up one good wife, or a few cents worth of power, I will use the power first. That is mere humanity, to say nothing of avoiding essential waste."

No farmer thinks of sowing oats by hand, or plowing with a hoe, but he expects his wife to wash by hand, churn by hand and do a lot of other jobs which can and should be done by power, is the way this enlightened farmer puts the situation.

How to solve the problem? Our farmer, who has made the above arguments, has what he calls the home workshop. It's a simple frame building close to the house, just 16 by 20 feet, one story high. In one corner is the gas engine. In one section of the room is the wash machine and the ironing machine. Another corner is taken by the cream separator and churn. A small dynamo providing electric light for house and barn is in another part of the room. Our farmer says this building contains the most useful and necessary plant on the farm. And he has some space left for other machines which he says will be needed soon.

Use power for the home as well as on the field, is the slogan of one progressive Wisconsin farmer.

Edison Visits Exhibit

By JANE LAKE

Tense Moment When Model of First Laboratory Was Unveiled

In the midst of an interview given the writer by Francis Jehl, of the Association of Edison Illuminating Companies and of the Edison Pioneers, a secretary rushed in and breathlessly announced: "He is in the building!"

A feeling of resentment against the "he" whose mere nearness was potent enough to interrupt an amazingly interesting talk covering the past and present development of things electrical—a scientific talk made comprehensively clear to an utter layman by the magic of Mr. Jehl's beautiful English, which flowed so smoothly that there was scarcely a trace of his mother tongue—and what there was of that only added charm to his remarks.

His courtesy did not fail even when the "he" information was given him, and when he quickly explained the reason for the breaking off of his talk, all resentment faded out at the tone of affectionate veneration in his voice as he said: "The master is here. You will excuse me? I hope to have the great pleasure to give you more information another day. You will wait of course and see him?"

All unwittingly I had stepped into a historical moment. The master—the "he"—was none other than Thomas A. Edison come in reality to mark the founding of the Museum of Edisonia.

Mr. Jehl hurriedly left the reception room of the temporary home of the Museum to go below and greet the Wizard of Menlo Park. The writer even more hurriedly dropped back in line with other correspondents and newspaper photographers. The true feeling of *qui vive* was apparent.

The seasoned picture men and blase reporters began a wait which developed into nervous excitement. *Qui vive* was lost in a higher tension. The machines were focused, shifted about, refocused—the flash powder was ready, held aloft, put down and again made ready as messenger after messenger ran up to say: "He is on his way"; or "Be ready now!"

At last an authoritative voice came over the heads of the crowd: "He is leaving the elevator—here he is." A way was made through the throng by uniformed guards.

At this a tiny red glow showed in the

queer slender lamps set in wooden bases on the old gas chandeliers from the Edison home. They were the first identical incandescent lamps with exposed wiring equipment ever installed—1879.

These lights had been on exhibition during the week and were operated by the regular building dynamo, but as Mr. Edison and party approached they were connected to the old original dynamo and the tiny glow gradually grew to what we now would call only defective lighting. The contrast in lighting will never be more forcibly shown—these dim lights of the past and the flare of all modernity as expressed in the great electrical show. A like contrast was felt as the flash of the present indoor photography came. Within a few feet was hanging a shadowy ghostlike picture of a man surrounded by the most powerful lamps made in that period—the first photograph made by incandescent lamps, dated 1889.

These with other contrasts served conclusively to show why—the reason for Edisonia—scientists—students—laymen—artists—this collection is to be the foundation for furthering the uses of electricity for all time.

A way was made through the throng by uniformed guards and into the enclosure stepped the man whose name shall go down through all the ages in history as one of the outstanding benefactors of mankind.

His great kindliness in stopping to speak to those he knew and to those who craved to hear a word from him had caused the delay. It had been like waiting for a capricious opera singer—for some government celebrity—for royalty—but the excitement changed to calm as the quiet voiced, strong but sweet expressioned man, turned to face the battery of lenses and then questioningly looked at a large velvet covered table to which he had been directed. He was shown a framed description of what was beneath the cover and then was asked to pull a silken rope. He smiled, slightly shook his head, and with deliberation read carefully every word within the frame.

When the cover fell away the light of pleasure which flared in the gentle face and the nods of approbation and reminiscent approval must have amply repaid all those men who had worked to so good a purpose as had culminated in the founding of an institution which not only will live to perpetuate the re-

vered memory of their master, but also will be an inspiration and a lasting aid to all students and scientists who shall be in any way interested in electrical development.

Mr. Edison had unveiled a model of his first laboratory erected for him by his father at Menlo Park many years ago. The replica is constructed so far as possible out of the material of which the original building was made. The roof is of the old roof—the windows are of the old glass—and the genuine pleasure and surprise expressed by Mr. Edison at its sight proved it to be faultlessly correct—and its inscription is eminently fitting:

Shrine of the mighty can it be
That this is all remains of thee?

—Acullus.

Let those love who never loved before.
Let those who always loved, now love thee more!

—Anon.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, OF "NATIONAL ELECTRAGIST," published monthly at Utica, N. Y., for October 1, 1922.

STATE OF NEW YORK, } ss.
County of New York, }

Before me, a Notary Public in and for the State and County aforesaid, personally appeared Farquason Johnson, who, having been duly sworn according to law, deposes and says that he is the Editor of the NATIONAL ELECTRAGIST, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 433, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:
Publisher, National Association of Electrical Contractors and Dealers, 15 W. 37th Street, New York, N. Y.
Editor, Farquason Johnson, 15 W. 37th Street, New York, N. Y.
Managing Editor, none.
Business Manager, Farquason Johnson, 15 W. 37th Street, New York, N. Y.
2. That the owners are:
The National Association of Electrical Contractors and Dealers. Not incorporated. Composed of 2113 members, of whom principal officers are:
James R. Strong, Chairman, 526 W. 34th Street, New York, N. Y.
Farquason Johnson, General Manager, 15 W. 37th Street, New York, N. Y.
3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are none.
4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the Company, but also, in cases where the stockholder or security holder appears upon the books of the Company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

(Signature of) FARQUASON JOHNSON,
Editor.

Sworn to and subscribed before me this 21st day of September, 1922.

ALEXANDER J. BOYLE,
(My commission expires March 30, 1923.)

WHO carries your Liability Insurance? The National saves you money on this.

• CONTRACTING •

A Department Devoted to the Study and Discussion of the Practical Problems of Electrical Contracting

ALLAN COGGESHALL Associate Editors HENRY F. RICHARDSON

Programme Instruments

In connection with signalling systems it is sometimes necessary to ring bells or horns at regular intervals in accordance with some prearranged schedule. This may sometimes be taken care of by means of the central signalling station described under factory calling systems. In this case a relay is closed at regular intervals by means of a contact device connected to clock system, a rapid stroke signal is then sent out by means of the central, such signal being distinctive from the other code signals in that the strokes on the single stroke bells are much more rapid.

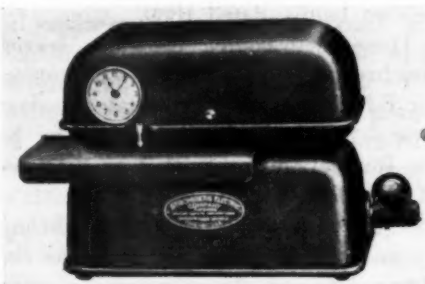
When the schedule of signals is more involved or extensive and when this schedule has to be modified from time to time so as to take off holidays or Saturdays and Sundays, or when two different schedules have to be superimposed on each other, use is made of a program instrument such as is shown in the accompanying illustration.

By means of this instrument and a properly prepared tape, contacts are made in any desired manner and on as many different circuits as may be required. For example it may be essential in a school to sound gongs for dismissal or assembly of classes in one department in accordance with one schedule and in another department in accordance with a very different schedule. No matter how different these schedules may be or how many independent schedules there may be, this instrument can be made to function properly. This is done by punctures in the tape at the proper intervals so located on the tape as to engage the proper set of contacts. Of course it is possible to so complicate matters that such an instrument be overloaded, but for all practical purposes the number of possible combinations of signals is unlimited.

The instrument illustrated and described here is not a time keeping instrument in itself, but is an impulse instrument, that is, it must be connected to a master clock circuit which sends out regular impulses. The bells or other

signals may be operated by the same source of energy which operates the master clock system or they may be operated by an independent source of energy.

This instrument may be mounted in the case containing circuit relays or in a separate case as required. They may be arranged for either one minute or five minute intervals between contacts. The durations of signals may be any time desired and schedules may cover periods of twelve or twenty-four hours.



Job Time Recorders For Cost and Production Systems

The fact that this program device may be connected up to other clock circuits in much the same manner as a secondary impulse clock, makes it possible to add the device to an existing clock system either at the time of initial installation or later. It also means that almost any desired arrangement can be obtained.

In and Out Recorders

In large manufacturing plants it is common practice to have the employees register their time on a card in and out, morning and night and noontime. Often when the establishment is not too large a good eight day movement clock with card attachment such as is manufactured by The International Time Recording Company is sufficient for all purposes. Such a clock is not electrical in its operation.

Where there are a large number of employees and where an electric clock system is necessary for other purposes, an electric time clock recording system may be justified. Often a contractor can prove such a system in by show-

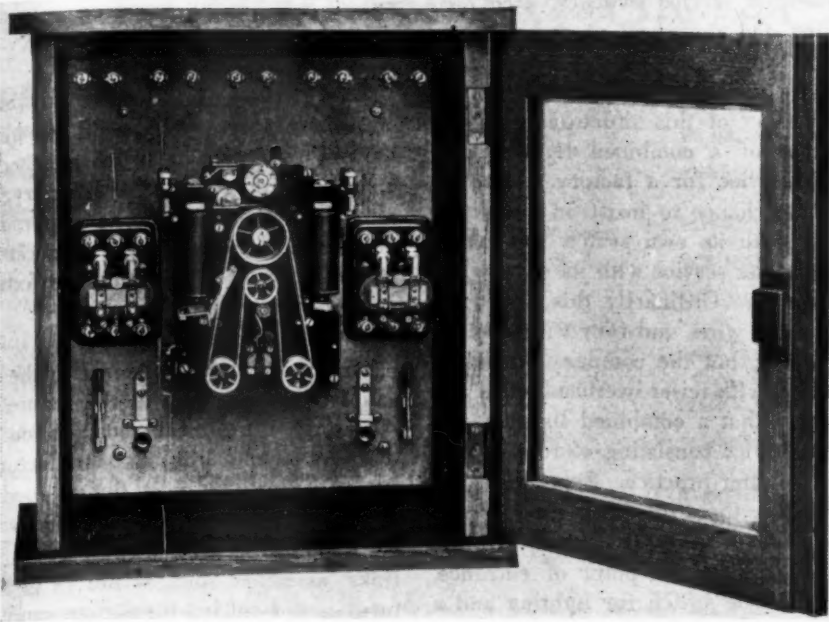
ing the owner that for a small additional expense some existing pathway of electric conduits can be made to accommodate the necessary wires for in and out recorders located at the entrance to the plant.

A typical illustration of the essential parts of such a time keeping station are shown in the accompanying cut. The card racks of course are a mechanical part of the equipment and may be arranged in any desired manner.

The electric recorder is actuated by impulse movements in the same way as a secondary clock and in addition there is a card shifting device controlled by the master clock which automatically fixes the spaces on the cards so that the printing occurs in proper position with respect to the titles and divisions on the card. This shifting device requires either an extra circuit from the master clock relay case, making it necessary to carry three instead of two wires to the recorder, or a special mechanical arrangement in the recorder itself to effect the card shifting by electro-mechanical means. In the latest designs of these instruments a disk is provided which is actuated by the impulse movements of the mechanism, and by means of pins engaging in this disk, it is allowed to turn only at certain pre-determined time intervals. This is a very ingenious device and enables the entire operation of the In and Out Recorder to be accomplished by means of a two wire circuit.

Job Time Recorders

The same plant that requires electric In and Out Recorders may also require Job Time Recorders for the purpose of recording the time expended on individual job orders. Such instruments may be arranged on circuits in the same manner as In and Out Recorders, although the instruments themselves are of the semi-portable type. Connections may be made to outlet box with permanent wiring and the instrument connected up by means of extension cord either permanently attached to the circuit wires or connected by means of



Programme Instruments for Automatically Ringing Bells or Blowing Whistles and for Automatic Closing and Opening of Electric Circuits

plug and receptacles. This latter method offers the advantage of detachability so that any recorder may be readily detached for repairs or change of location. This instrument operates on a two wire circuit so that a plug and receptacle if used need only be of the two pole type but preferably of the polarity type.

In both the job recorders and the In and Out Recorders, an ink tape is used for making the impressions on the cards, and these tapes are turned by the impulse timing mechanisms so that a fresh portion of tape is used for each impression. When the tape has been used throughout its entire length, it is automatically reversed and is run through in the reverse direction. In time, however, the tape must be replaced by a fresh tape, and this matter is generally controlled by a supervisor who is provided with keys which give access to the portion of the instruments containing the tapes and printing mechanisms.

With apparatus of this sort some form of regular routine inspection is well worth while. If such inspection is to be monthly or weekly or bi-weekly, arrangements can be made so that the timing system automatically calls attention to the fact that the day has arrived when such inspection should be made. In other words, such timing systems can readily be arranged so as to be as free as possible from the errors due to human frailties.

Job and In and Out Recorders usually take more current to operate than secondary clocks. A good rule to re-

member therefore is that there should be only one-half as many on a circuit as the number of secondary clocks allowed per circuit. On short circuits there may be as many as twelve secondary clocks allowed, a similar circuit should not have more than six recorders. It is well if possible to keep the circuits separate, although secondary clock and recorders can operate on the same circuit. If this is done, it should be remembered that two secondary clocks are the equivalent of one recorder in current consumption.

(To Be Continued)

CODE CHATS

By HUBERT S. WYNKOOP, M. E.

Monthly Discussion of National Electrical Code Practices by Well Known Authority in Charge of Electrical Inspection, City of New York

Sub-standard Switch Plates

Two years ago we were cursed with an influx of brass flush switch plates having a thickness of 0.25 inch. The standard thickness is .040; and most of the manufacturers conform. But to suit the whim of architect or owner or to shave a little in cost, someone succumbed to the temptation to slight the standard. The container was marked with the thickness, *but did not carry the name of the manufacturers*. The thinner plates are easily deformed by the pressure of the retaining screws and have sometimes caused grounds. Furthermore, to approve them would be a breach of faith with the industry as a

whole. We seem to have gotten free from this evil; and I am wondering whether the manufacture of these sub-standard plates has ceased, or whether the product is finding place in other fields.

Gaining Floor Beams

Where the local building authority permits the gaining of floor beams to receive armored cable, the practice cannot be prohibited generally by any reference to the Code. It ought to be clear that the very purpose of placing armor on the wire is to render the latter resistant to mechanical injury—even through the driving of nails—and that the relocation of a cable or the placing of a metal guard plate over it can only be justified when the cable fits tightly in the gain. When so wedged in place, the cable armor will not usually resist penetration by a nail held firmly in alignment by the flooring.

The above comment applies only to one or two adjoining lines of cable. Sometimes, however, the contractor places four or five cables in a gain which is considerably wider than the floor board. Such a job we refuse to approve, on the ground that the cable is not intended as a foundation for the flooring.

The better class of contractors bore the beams in preference to gaining them.

Submetering Outlets

In this territory we have a couple of dozen so-called sub-metering companies. These exist through their success in persuading owners to buy electricity at wholesale and resell to their tenants at retail. They seem to be the successors of the old time isolated plants which were driven into inaction by the recurring coal shortages of the past six or seven years. Some of the companies combine engineering ability with their bookkeeping, while others are mere bookkeeping concerns.

Our interest in the situation lies in the fact that the submeters are cut in in all sorts of ways. Some of the companies refuse to set a meter until a proper pan is provided, while others will connect to any old bunch of wires that the tenants' contractor may have left hanging out of an outlet box. In the latter case, the meter setter is quite contented if he can find a bit of plank (unpainted, of course) which he can set up on wooden cleats in front of the

outlet box. On this plank he will place from one to half a dozen meters, the leads to which run behind, through and on the face of the board in the most indiscriminate manner, with or without flexible tubing, as may be the more convenient.

We are gradually rounding up these companies and informing them of our requirements, for we think that those who offend are ignorant rather than wilful. We hope therefore to get them all in line for good construction without resorting to the courts.

Wired Glass for Transformer Vaults

In looking over the records I find that we authorized, in one instance at least, the interesting and unusual employment of wired glass in metal-sash windows and kalamined doors of a transformer vault. The consent carried with it a proviso that each such opening be protected by automatic fire shutters or fire doors.

Conduit Lines Under Basement Floor

It is not an uncommon practice in large buildings to run an underground line from the service point to the distributing switchboard. The Code does not require lead sheathed wire if the conduit is watertight; but whether the conduit fails to remain watertight or whether it merely serves as a trap for condensation we have experienced a number of breakdowns which tend to show the conduit should be run along the side wall where practicable, or if buried should contain only lead sheathed wires.

Motor Pans

We do not necessarily require a pan for a motor; sometimes several pans make a better job. The main point is to provide ample means for catching all the oil drip.

Solid Wires in Conduit

So far as I can recall, there is nothing in the Code which states that for any given size of wire in conduit the conductors must be stranded. Good practice, however, seems to require that no solid conductor larger than No. 8 should be drawn into conduit, unless the runs are straight and very short.

More Than One Service Switch

I have already noted the fact that while we require a master service switch to control all current supplied to gangs

of so-called service switches, each controlling one apartment or one riser, we have accepted the two switches in a 2-family house without a master switch. A variation of this situation occurs in the case of a combined lighting and power service for a factory. Here we have the chance to insist on a lighting service with its own switch and cutout and a power service with its own switch and cutout. Ordinarily this would require three wires and four wires—seven altogether; but the company wishes to get along with fewer overhead wires and we agree that a combined lighting and power service consisting of four or five wires is better practice. Some inspector may insist, then, on a 4-pole or 5-pole switch; but we are satisfied to have the service split at the point of entrance, with a 3-pole switch for lighting and a 3-pole or 4-pole switch for power.

Insulation on Grounded Neutral Conductor

Does anyone accept less than Code Standard 0-600 volt rubber on a wire just because it happens to form the grounded neutral? We have declined to accept 2500 volt insulation on the common wire of a 4-wire, 3 phase system operating at 4000 volts. Practice for the past 20 years has sanctioned the requiring for all wires of a circuit the insulation demanded for the maximum operating voltage of the circuit. Witness the neutral of an Edison 3-wire system.

Outlet Box Covers

How many inspection departments are insisting upon covers of standard thickness, namely, .078 inch? And how many are accepting canopy brass plates of much less than half the standard thickness?

Interpreting the Code

It should be understood that there is no authority which can give an official and universally binding ruling on any point in the Code. There is no provision for appeal from the ruling of the chief of the local inspection service. Since the contractor will have to abide by the local ruling in any event, the best course for him to pursue in my opinion is to protest to the local chief to ascertain from several members of the Electrical Committee their attitude toward the point in question. Any progressive and broadminded chief would comply with this request unless the

appeal was clearly based on untenable grounds.

Disc Fixture With Centre Socket

A disc fixture which is held assembled by a centre socket or switch attached to a hickey nipple is not satisfactory, inasmuch as the inspector is required to disassemble and disconnect the socket or switch in order to open up the fixture.

Fimsy Fixtures

This leads me to comment in the unsatisfactory situation in the fixture industry, due to unfair competition on the part of unscrupulous manufacturers who put out the most flimsy goods—burrs not removed, old code wire, sockets hanging on wire instead of on the links, assembly such as not to prevent turning and cutting insulation, canopies of tinfoil thickness, fixture wire jammed against ceilings, etc.

New Method of Rating Motors

Some contractors have become confused, and have confused our inspectors, over the method of rating motors as 40 degree motors or 50 degree motors, according to the temperature rise which is allowed. We are not directly interested in such ratings, as we judge the size of conductor necessary by the amperes required by the motor—and we accept the nameplate amperes unless obviously inaccurate.

Receptacles in Kitchens and Dining Rooms

Now and then we are asked to accept a 40 watt rating for a plugging receptacle, or an extra lamp socket or receptacle located in a kitchen or a dining room. For several years we have refused because the receptacle is obviously intended to supply current to an iron or a toaster or a percolator, any one of which consumes from 500 to 600 watts. We have not attempted to extend this ruling to other rooms. Our revised ordinance which we hope to secure some day will contain the following requirement:

Where provision is made for electric irons, grills or other appliances requiring more than 250 watts each, the number of sockets or lamp receptacles (rated at 40 watts each) must be correspondingly decreased, so that the connected wattage of the circuit will not exceed 660.

Of course if we are successful in finding a substitute for the discredited 660-watt rule of the Code, the heater outlet difficulty will be cared for in some other manner.

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ORGANIZATION ACTIVITIES

STATE CHAIRMEN AND SECRETARIES

State	Chairman	Secretary	State	Chairman	Secretary
ONTARIO, CANADA:	Harry G. Hicks, 203 Church St., Toronto	J. A. McKay, 24 Adelaide St., W., Toronto	MARYLAND:	A. C. Brueckmann, Keyser Bldg., Baltimore	C. Philip Pitt, 7 St. Paul St., Baltimore
BRITISH COLUMBIA:	C. C. Carter, 739 Hastings St., Vancouver	P. F. Letts, 3044 Granville St., Vancouver	MICHIGAN:	Henry Roseberry, 41 Pearl St., Grand Rapids	H. J. Shaw, 613 Lincoln Bldg., Detroit
COLORADO:	J. Fischer, 213 15th St., Denver		MINNESOTA:	John M. Roberts, 1589 Selby Ave., St. Paul	Arthur P. Peterson, 2395 University Av., St. Paul
CONNECTICUT:	Tryon Smith, 247 State St., New London	Geo. M. Chapman, 43 E. Main St., Waterbury	MISSOURI:	Oscar L. Fickie, Kansas City	A. J. Burns, 533 Delaware St., Kansas City
DISTRICT OF COL.	Frank T. Shull, Conduit Rd. and Elliott St. Washington	H. R. Harper, 635 D St., N. W., Washington	NEW JERSEY:	Geo. E. Davis, 23 Central Ave., Newark	Elmer D. Wilson, 23 Central Ave., Newark
FLORIDA:	T. E. Satchwell, Jacksonville	M. A. Ladd, 108 W. Bay St., Jacksonville	NEW YORK:	F. A. Mott, 29 St. Paul St., Rochester	F. M. Farley, 15 West 37th St., New York City
INDIANA:	T. F. Hatfield, 102 S. Meridian St., Indianapolis	A. I. Clifford, 507 Odd Fellows Building, Indianapolis	OHIO:	C. L. Wall, 212 S. Main St., Akron	Walter R. Keefe, 939 E. McMillan St., Cincinnati
IOWA:	Louis L. Corry, 510 Brady St., Davenport	Arthur Tucker, 619 Jackson St., Topeka	PENNSYLVANIA:	R. W. Keck, Allentown	M. G. Sellers, 1518 Sansom St., Philadelphia
KANSAS:	C. S. Smallwood, 1017 N. 5th St., Kansas City	W. H. B. Spangenberg, 406 Marine Bank Bldg.	TENNESSEE:	P. W. Curtis, Chattanooga	J. A. Fowler, 10 S. Second St., Memphis
LOUISIANA:	James M. Maloney, 807 Poydras St., New Orleans		WISCONSIN:	L. G. Ross, 1305 Tower Ave., Superior	H. M. Northrup, 25 Erie St., Milwaukee

LIST OF LOCAL ASSOCIATIONS AND MEETINGS

State and City	Local Secretary	Street Address	Time of Meet.	Place of Meet.	State and City	Local Secretary	Street Address	Time of Meet.	Place of Meet.
ALABAMA					NEWARK	Geo. E. Davis	23 Central Ave.	1st Monday	23 Central Ave.
Birmingham	J. R. Wilcox	313 No. 19 St.	Tues. 10 a. m.	Members' Offices	PATERSON	H. M. Demais	88 Ellison St.	Last Friday	P. S. Bldg.
Mobile	Frank Sigler	Sigler Elec. Co.	Wed. 5 p. m.		NEW YORK				Pekin Rest'mt
ARIZONA					ALBANY	Chas. Russell	Box 390	3d Thursday	
Phoenix	A. H. Rosenberg		Tues. 4 p. m.	Bldrs. Exch.	Binghamton	A. H. Hyle			
CALIFORNIA					Brooklyn	H. F. Walcott	44 Court St.	1st Mon.	Cham. Com.
Berkeley	J. M. Gregory	Pacific Bldg.	Fri. 8 p. m.	Pacific Bldg.	Buffalo	E. P. McCormick	555 Wash. St.	Fridays	507 Elec. Bldg.
Covina	F. Rambo		1st & 3rd Mon.	Ontario	Cooperstown	B. B. St. John	Oneonta	3d Tues.	Vanon
Long Beach	O. W. Newcomb	308 E. 4th St.	Tues. Ev'g.	Spaulding's	Endicott	A. H. Hyle	Binghamton	Tues.	Cham. Com.
Los Angeles	Irvin C. Brass	118 E. 3d St.			Glens Falls	W. F. Combs	21 Main St. S.		
Oakland	J. Gregory	Pacific Bldg.	Tues. 8 p. m.	Pacific Bldg.	Jamestown	Henry Lund	309 Main St.	3d Mon.	Mfgs. Ass'n.
San Francisco	A. Elpins	165 Jessie St.	12 Noon, Thurs.	States' Cafe	Kingston	M. C. Rivenberg			
San Noya	Los Angeles Assn		Tues. 6:30 p. m.	Pin Ton Cafe	Nassau-Suffolk	H. J. Wick	Bay Shore		
COLORADO					New Brighton	E. L. Taylor	Tottenville		
Denver		403 Mining Ex.	1st and 3rd Fri.	DG & EL Aud't.	N. Y. Sec. No. 1	J. P. Ryan	26 Cortlandt St.	1st Thurs.	Penn's Hotel
Manitou			Friday Nights	Col. Springs	Independent	C. J. Christensen	101 W. 83d St.	2nd & 4th Wed.	226 W. 58th St.
Pueblo	H. Ashcraft		2nd Tues.	Commerce Club	Sec. No. 3.	L. F. Lueddecke		Monthly	Various Stores
CONNECTICUT					Olean	H. C. Thuerk	Olean L.P. Co.	3d Thursday	
Hartford	Mr. Cook	Hart & Hegeman	1st Wed.	Hartford	Oneonta	B. B. St. John	29 St. Paul St.	1st & 4th Mon.	Eggleston Hotel
New Britain	F. Mulvehill		On Call	192 Grand St.	Rochester	H. F. Janek	S. Glen Falls	2d & 4th Thurs.	ara'gs & C. Fa's
Waterbury	D. Neth	Conn. Lt. & P. Co.			Saratoga Springs	W. F. Camp	McClellan St.	Subject to call	
DIST. COL.					Schenectady	Mr. Spengler	P. O. Box 809	1st & 3d Monday	St. George, S. I.
Washington			2d Thurs.	Dewey Hotel	Syracuse	H. N. Smith	Tottenville, S. I.	1st Tues.	Gas Office
FLORIDA					Trentonville	W. Taylor	First St.	1st Tues.	Elks' Club
Jacksonville	W. L. Joseph	155 E. Forsyth	1st Tuesday	208 Realty Bldg.	Troy	H. W. Boudry	Gray Elec. Co.	3d Fridays	Utilities Bldg.
Miami	C. E. Pullen	Pullen-Zoll Co.			Utica	Mr. Hall	White Plains	Monthly	
GEORGIA					Westchester	I. W. Austin	Roth Block	Monthly	
Atlanta	Cheny Emerson	Ira & Baker Sta.	Thurs. 12:30	Dafodil Res.	Watertown	L. B. Smith	Westbury	Monthly	
ILLINOIS					Woodmere	Geo. La Salle	Manor House Sq	Monthly	
E. Moline	E. J. Burns	Rock Island	Once a month	Bldrs. Ex.	Yonkers	Mr. Mayer		Monthly	
Chicago	J. W. Collins	179 W. Wash. St.	2nd & 4th Wed.	Lmbrms Ex.	OHIO				
Decatur	E. O. Weatherford	114 E. Wm. St.	1st Wed.	Y. M. C. A.	Akron	C. L. Wall	212 So. Main St.	Monthly	2d Nat. Bk. Bldg
Springfield	C. A. Meadow	407 E. Adams St.	Sat. 2 P.M.	Arcade Bldg.	Bellaire	J. Blumenberg	Bellaire	Call of Sec'y	Bellaire
St. Louis	C. F. Broderick	317 E. Bro'dwy	1st & 2nd Tues.	Post Hall	Cincinnati	W. R. Keefe	939 E. McMillan	Tues. 3 P. M.	Cham. of Com.
La Salle	Ed. Blaine		1st & 3rd Mon.	219 18th St.	Cleveland	Geo. D. Bury	Elec. League	1st & 3d Thurs.	Hotel Statler
Rock Island	E. J. Burns	219 18th St.			Columbus	O. A. Robins	Builders' Exch.	2d Wed.	Builders' Exch.
Streator	Wm. Schroder	613 Tyler St.			Dayton	O. J. Osmond	41 Fountain Av.	1st & 3d Mon.	Bldrs. Exchange
INDIANA					Springfield	J. R. Yost		On call	Various
Evansville	I. A. Welburn	404 Main St.	Ev. Fri.	Y. M. C. A.	Stuebenville	D. C. Hartford		1st Wed.	Nat. Ex. Bank
Gary	A. B. Harris	570 Washington			Toledo	F. J. Lucas	Builders Exch.	On Call	M'ts & M'rs. As.
Indianapolis	C. L. Skillman	29 S. Capitol	1st & 3rd Thurs.	Comm. Club	Youngstown	F. F. McBride		Mon. Noon	Y. M. C. A.
South Bend	Mr. Moran, Jr.	832 N. St. Louis	1st Tues.	B. & T. Ex. Bldg	OSAGOM				
Wabash	L. F. Meyers	120 E. Market St.	Wed. Ev'g.		PORTLAND	F. R. Whittlesey	212 Henry Bldg.	2d & 4th Monday	Cham. of Com.
IOWA					PENNSYLVANIA				
Davenport	Louis F. Cory		Mon. 6 p. m.	Chamber Com.	Allentown	A. Hill	Bethlehem	Monthly	
Sioux City	F. H. Abbot		Mon. 6 p. m.	Jackson Hotel	Bethlehem	A. H. Hill	510 W. Main St.	Monthly	
Waterloo	H. L. Hileman	600 Bluff St.			Catawauqua	W. T. Kleppinger		Last Thursday	
KANSAS					Dubois	C. E. Blakeslee	Bethlehem	Monthly	
Topeka	H. S. Lee	816 Kansas Ave.	Mon. Noon	Elk's Club	Easton	G. E. Hill	Bldrs. Exch.	Monthly	
Wichita	L. A. Harris	446 N. Main	Ev. Tues. 7:30	United Elec. Co.	Erie	Earl Stokes		Monthly	
KENTUCKY					Lancaster	A. Deen	1518 Sansom St.	3rd Friday	Bldrs. Exch.
Louisville	Walter Diecks	528 W. Jefferson	2-4 Thurs.	B. of T. Bldg.	Philadelphia	M. G. Sellers	McCance Bldg.	2nd Thurs.	Und'w'r's Office
Padsch	W. R. Kitterjohn		Last Thurs.		Pittsburgh	Joe Jacques	Bd. of Tr. Bldg.	1st Friday	Various
LOUISIANA					Scranton	A. J. Fowler	Dubois	Tues.	Zenke's
New Orleans	R. S. Stearnes	336 Camp St.	1st Weds.	Teocali Hall,	St. Marys	C. E. Blakeslee		Mon.	
Shreveport	Percy Elliott	Elliott El. Co.	Ev'y Monday		Wilkes-Barre	Ambrose Saricks	E. King St.	2d & 4th Thurs.	
MAINE					York	A. E. Harris		2d & 4th Tues.	
Portland	N. S. Boothling	222 Middle St.	On call		SOUTH CAROLINA				
MARYLAND					Columbia	E. L. Cashlon	Sumter, S. C.		
Baltimore	C. P. Pitt	7 St. Paul St.	3d Tues.	Eng'rs. Club	Greenville	E. C. DeBuhl	Ideal Elec.		
MARSHUSETTS					TENNESSEE				
Boston					Chattanooga	Carl Schneider	412 Kirby Av.	Wednesday	Manhattan Cafe
Fitchburg	R. M. Gowell		3d Thurs.	Boston City Club	Knoxville	H. M. Moore	615 Market St.	Noons	Rwy. Lt. Co.
Haverhill	H. W. Porter	24 West St.	1st Mon.	Fay Club	Memphis	H. A. Street	285 Madison Av.	Monthly	Aliya Cafe
West Medford	H. J. Walton	Malden El. Co.	2d Mon.	El. Lt. Sta.	Nashville	J. B. Mullen	Arcade	Ev. other Wed.	Talarie Hotel
Worcester	J. W. Coghlin	159 Main St.	Monthly	Various	TEXAS			1st & 3d Wed.	
MICHIGAN					Dallas	H. A. Brewster	409 S. Eway	On call	409 S. Eway
Battle Creek					UTAH				
Detroit	H. Shaw	613 Lincoln Bldg	Ev'y oth'r Tues.	Post Tavern	Salt Lake City	Gus. Forsberg	69 E. 4th So.	Wed. 12:15 p.m.	Newhouse Hotel
Flint	J. Markle	718 S. Saginaw	Last Thurs.	C. A. R. Hall	VIRGINIA				
Grand Rapids	Henry Romyrn	40 Ionia Av. N.W.	Tues. Noon	Ass'n of Com.	Lynchburg	W. M. Elliott	Lynchburg	1st Wed.	Local Stores
Kalamazoo	M. Randall	Exch. Place		Cham. Com.	Norfolk	K. D. Briggs	Arcade Bldg.	Wednesdays	Old Col. Clb.
MINNESOTA					Richmond	W. A. Cutlett	Jeff. & Grace Sts		
Duluth	Alfred L. Foster	210 W. 1st St.	1st Tuesday		WASHINGTON				
Minneapolis	A. P. Peterson	2395 University	2d & 4th Tues.	Builders' Exch.	Seattle	J. R. Barry	Pantorges Bldg.	Thursdays	Elks Club
St. Paul	A. P. Peterson	Ave., St. Paul	2d & 4th Mon.	Elk's Club	WISCONSIN				
MISSOURI					Green Bay	John B. Tingley	223 Cherry St.	1st Thurs.	Nicolet Bldg.
Kansas City	R. L. Hutton	212 Admir'l Blvd	6:30 P. M.	University Club	Milwaukee	Thos. W. Nixon	719 Majestic Bld.	2nd Tuesday	Maryland Hotel
St. Louis	Ben Grieb	904 Pine St.	Tues. Evs.	Am. Hotel	Racine	F. H. Patrick	1545 W. Blvd.	1st Tues.	Racine Bldg.
NEBRASKA					CANADA				
Lincoln	G. C. Kingham	142 S. 12th St.	1st & 3d Mon.	C. of C. Bldg.	Guelph	G. E. B. Grinyer	43 Quebec Co.		
Omaha	J. B. Coningham		1st & 2nd Mon.	Various	Hamilton	K. J. Donoghue	c/o N. Elec. Co.		
NEW HAMPSHIRE					Kitchener	O. S. Leyes	c/o Doerr El. Co.		
Portsmouth	F. C. Hatch	Kittery	2d & 4th Wed.		Ottawa	A. C. McDonald	128 Osgoode St.		
NEW JERSEY					Toronto	J. A. McKay	204 Adelaide St.	Mon. 8:00 p.m.	Elec. Insp. Office
Atlantic City	F. P. Wright	16 Ohio Ave.	1st Thursday	Malatesta Hotel	Vancouver	P. F. Letts	3044 Granville St.	2d Tues.	Bd. of Trade
Jersey City	Wm. Doellner	743 Bergen Ave.		P. S. Bldg.	Windsor	A. H. Cook	609 Moy Ave.	Ev'y Tuesday	724 Pacific Bldg.
Long Branch	Chas. Maggs	462 Bath Ave.	1st & 3rd Mon.	Comm. Hotel	Niagara Peninsula	W. H. Mackenzie	St. Catharines		

Death of Frank Adam

With deep sorrow it is learned of the death of Frank Adam of St. Louis, who passed away on September 13 at the age of eighty-four. Mr. Adam was at his desk up to within two weeks of his death and was ill in bed only about a week.

Readers of the NATIONAL ELECTRAGIST are well acquainted with the progressive company headed by Mr. Adam and friends of the National Association of Electrical Contractors and Dealers mourn his death as the loss of an unusually active worker in that organization and also other associations in times past.

Wilson in New Work

J. E. Wilson, formerly secretary of the Massachusetts State and Boston Local Associations, has accepted a position to promote the interests of the Plainville Electrical Products Company of Plainville, Conn. He has established an office at 263 Summer Street, Boston, where he will carry on his new work.

It is gratifying to know that the well known association exponent has continued his endeavors in the electrical industry, and we voice the wish of his many electrical friends in New England in hoping that he may attain as many high honors in his new work as he did in his former connection with the two aforementioned institutions.

Fixture Market Convention

Plans are rapidly being perfected by the various committees representing The Lighting Fixture Dealers' Society of America, The National Council of Lighting Fixture Mfrs., and The Illuminating Glassware Guild to make the 1923 Fixture Market and convention far surpass all of the conventions and Markets that have been held in the past, by working out a program that will be confined almost exclusively to educational work which should prove very interesting and instructive to all representatives who are in attendance from the three organizations. The big affair will take place in Cleveland, January 15-20.

Among the special features of the convention will be a practical demonstration of selling to a retail customer, which should give the dealers and their salesmen some new effective selling arguments that they will be able to capitalize on in their own business.

Believing that an educational program will be the most expeditious way

to broaden the activities of the three organizations with the result that each dealer and manufacturer will have a better understanding of how to more efficiently promote the interests of his own business, as well as to effect a closer feeling of coöperation throughout the industry, it has been decided to confine this next convention and Market to the interests of the lighting fixture dealers and manufacturers only.

New York Electrical Show

The largest electrical show in the history of the industry was held in the Grand Central Palace, New York City, beginning Saturday, Oct., 7 and continuing during the week of October 9.

There were some one hundred and fifty exhibitors whose displays ran the gamut of usefulness, beauty and scientific development. There were exhibits to interest every type of individual and every type was there among the crowds.

The small folk were entertained by Christmas tree things and fascinating displays of several manufacturers of electric toy trains in operation. The housewives were intrigued by the innumerable labor saving devices and household comforts. The business man's interest was held by an unusually effective miniature city building and sky line illuminated by electric signs of all descriptions.

An Electragist

maintains high standards of practice at all times. That's why he's the man you want to do your work.



Anything electrical—wiring or merchandise—an Electragist can be depended upon. His work is high grade always. When you want real electrical service call on

(NAME)
ELECTRAGIST
(ADDRESS)

The word Electragist, meaning "a leader in the electrical contractor-dealer business," is registered as a trademark by our Association, and only active members can use it.

Attention Electragists—A set of three stereos used in this series of ads will be sent postpaid to any Electragist upon receipt of one dollar for the set

Power plant men and electrical workers in all branches were crowded about a model of the Hell Gate station of the United Electric Light and Power Co. This showed a model of their water front accommodation and a reproduction of a 10,000 ton vessel at the dock and also their method of hydraulic ash handling and its resultant elimination of labor. These same men and other types were evincing enthusiastic interest in a full sized replica of underground electrical conduit construction, street surfaces, manholes and service boxes as shown by the Consolidated Telegraph and Electrical Subway Co.

There were real window displays showing changing lighting effects—electrically equipped furniture—electric motor trucks and pleasure cars—electrically driven machinery for soap wrapping—moving pictures—radio receiving and broadcasting apparatus in operation—refrigerating plants and heating units—in short a show which will stand out in the annals of the electrical industry as an event which will go a long way toward demonstrating to the public just what it means to Electrify.

Museum of Edisonia

From October 2 to October 21 there was held in the Grand Central Palace, New York City, under the joint auspices of the Association of Edison Illuminating Companies and of the Edison Pioneers an exhibition known as the Historical Exhibit of Electric Lighting. Together with this was shown what is to be known as the Museum of Edisonia.

This collection consists of early electrical apparatus, instruments, equipment and documents of much educational and sentimental interest for the electrical engineering profession and for all connected with the electric light and power industry.

Conspicuous elements of the exhibit were:

Museum of Edisonia, the nucleus of which was collected and exhibited at the Louisiana Purchase Exposition, St. Louis, 1904.

The William J. Hammer Historical Collection of Incandescent Lamps, 1878-1913.

Collection of Historical Electrical Apparatus contributed by the American Institute of Electrical Engineers.

DO YOU include the Code of Practice as a part of your bid? It saves misunderstandings.

Historical instruments and lamps kindly loaned by Thomas A. Edison.

Donations and loans from universities, private corporations, and individuals.

F. A. Wardlaw, Secretary of the Edison Pioneers, is acting as curator with the assistance of Francis Jehl. Both were associated with Mr. Edison in the early development of the incandescent lamp at Menlo Park, New Jersey.

It is proposed ultimately to place this historical material permanently upon exhibition in New York City. Contributions of material with a view to making the exhibit more comprehensive and representative will be welcomed. Communications regarding the exhibit should be addressed to Association of Edison Illuminating Companies, 29 West 39th Street, New York, N. Y.

Davis Meetings

Gatherings in Denver, Colorado Springs, and Pueblo Bring Good Results

Larry Davis and Ken McIntyre, representing their respective organizations, made their visit to Colorado a memorable one from the viewpoint of the man in the electrical industry. Coming as they did on the last leg of the 10,000 mile trips, their observation en route

helped materially in approaching the problems found here.

The psychological effect too is one of benefit for it has given a more definite purpose to the League program at Denver. Better service and extension of markets will come from the advice imparted by the two visitors, and stronger group associations should result from their efforts.

In addition to the personal assistance rendered by Davis and McIntyre during their two day visit in Denver, their analysis of the contractor-dealer's problems proved gratifying, judging from the discussion developed during the meeting on the night of September 27.

The dinner at Daniels & Fisher's the night before had an attendance of 115, including a number of electrical men from northern Colorado. George W. Bixler, director of publicity of the Denver Gas and Electric Light Company, served as toastmaster after Vice-Chairman McCammon officially opened the meeting. The program was arranged solely for Messrs. McIntyre and Davis and it is believed that some of the thoughts advanced by them in their addresses did considerable to make nearly every Denver electrical man wake up as to the possibilities before him, as made possible through coöperative effort.

The meetings in Pueblo and Colorado Springs on the nights of Septem-

ber 23rd and 25th were attended in each case by about 40, of which number about a dozen were from Denver. Among those present were J. J. Cooper, John T. Fain, A. C. Cornell, C. L. Hill, F. F. McCammon, Clarence Keeler, J. W. Ryall, A. L. Vieau, H. D. Randall, Walter T. Wells, Bill Trudgian, W. J. Keating and the executive manager of the Denver League.

The Pueblo contractors under the direction of President Franz Ashcraft and E. F. Stone of the Southern Colorado Power Co., staged the dinner meeting at the Vail Hotel, while the Springs meeting was held at McRae's under the direction of Matt Whitney and O. F. Lackey. The latter, as representing the Colorado Springs Light, Heat and Power Company, expressed a marked interest in the work being done by the League and pledged his support to it whenever extension of activities can be made in that territory.

Mr. McIntyre was detained in California on work pertaining to the Society for Electrical Development and so did not rejoin Larry Davis until in Denver. McIntyre is a member of Beatty-McIntyre, Ltd., of Toronto, one of the largest contractor-dealer firms in the dominion. He was the first one to stage an electrical home exhibition in Canada and expects shortly to supervise the opening of the third home in Toronto.



After a Fine Get Together Meeting in Portland, Larry Davis, John Tomlinson, Frank Whittlesey and Kenneth McIntyre Hiked up the Columbia River Highway to Get Cooled off by the Spray from Multnomah Falls

For Your Protection

The Electragist protects you in electrical transactions. You are assured of safety and satisfaction in all service—wiring or merchandising.

An Electragist does quality work in every detail of any job, large or small. His servicing is dependable and trustworthy, for he knows that goodwill acquired means more than the profit gained.

Have An Electragist Do Your Electric Work



(ADDRESS)

Electragist
(NAME)

The word Electragist, meaning "a leader in the electrical contractor-dealer business," is registered as a trademark by our Association, and only active members can use it.

Because you are a reliable contractor-dealer—an Electragist—you are privileged to use these go getter ads and reap the profit that is sure to result therefrom. One dollar secures the set of three stereos of the design

Winter Meeting in Idaho

At the semiannual meeting of the Southern Idaho Association last month it was decided to hold the next convention of the Association in Boise during the winter, the time to be announced later. At this meeting Walter Bauchman of Idaho Falls was elected secretary to fill the vacancy caused by the resignation of Mr. Stevens.

Pittsburgh Electric Show

Extensive arrangements have been made by the local interests of all branches of the industry in Pittsburgh in order that the electrical show to open on November 4 in that city may prove a complete success. The Motor Square Garden has been selected as the most appropriate place for the exhibition, which will last a week.

This show is the first one that has been held in Pittsburgh in a number of years. It is sponsored by the local Electric League and Paul D. Lockard or the Duquesne Light Company is general manager. It is expected that over one hundred and fifty exhibitors will have exhibits. Exhibit booths will be placed on both the first and second floors of the big auditorium.

Activities Among Electrical Interests in Canada

These Items Have Been Contributed by Representatives in Various Sections of the Dominion

For Better Business

Secretary of British Columbia League Explains Meaning of Service

In behalf of better electrical business in all branches of the industry generally and by the interests in Western Canada in particular, Rey E. Chatfield, secretary and manager of the Electrical Service League of British Columbia, presents some humbly philosophic views that are unusually pertinent of the situation at the present time, as follows:

A business succeeds and prospers today only to that extent which it renders to the public a definite service.

The electrical industry today is NOT rendering to the public that measure of service which it should render in order to succeed and gather the fruits of conscientious intelligent service.

Every time a member of the electrical fraternity cuts or skimps a job he is just pushing the industry a tiny bit down the scale of successful business, injuring himself more than anyone else.

Every time a price is cut or a job is skimmed or unsatisfactory service is rendered the plane of the industry is lowered. The wireman may say "O Bunk—You cannot do anything else—Why everyone is doing it." Perhaps the supply house feels that it is not concerned, neither is the power company. But every branch of the industry is vitally concerned.

Right now the industry in British Columbia is gathering the somewhat sour fruits of unsatisfactory service.

The contractors are today most affected and they are bearing the brunt of the history of the industry for the past two years.

For the small contractor it is next to impossible to make a living wage and

no matter how you try to shift the blame—each contractor has added his dubious bit to bringing about the present state of affairs.

The supply house is feeling the effects of this past history in two very pertinent points—poor credit risks in the trade and decreased sale of material—perhaps not a definite decrease in volume of sales but in a decrease over what should have been sold had the industry been rendering the service to the public that it should render.

The power company is undoubtedly increasing its load but not to the extent it would if the industry as a whole were rendering to the public that measure of service to the public it should render.

The power company and the supply houses are alive to the situation but the contractor-dealer is not.

The solution to the present chaotic condition of affairs is through organization.

The member of the Contractor-Dealers' Association who does not attend the meetings of his association is doing his bit to keep the standards of the industry down.

Support your association and attend the meetings.

New Electrical Building

The Hamilton Hydro Electric System have recently purchased the building formerly occupied by the Bank of British North America, 12 King St. East, Hamilton. They are remodeling and extending the building for a six story office building with show rooms, three floors will be built at present and three in the future. This is one of the best locations in the business section of the

city of Hamilton. They propose to have one of the largest up-to-date elec-



Dependability

You can depend on an Electragist because he does business on a principle basis. Fairness is his watchword. His business associates always get a square deal all around.

An Electragist's high practice standards make him dependable. Before he gives you a service he considers the work from every angle and makes sure that no detail is overlooked. He is thus able to carry out the terms of any agreement made with customers.

An Electragist is dependable. That is why you want him to do your electrical work—wiring or merchandising.

(NAME)

ELECTRAGIST

(ADDRESS)

The word Electragist, meaning "a leader in the electrical contractor-dealer business," is registered as a trademark by our Association, and only active members can use it.

Here's an ad that's a business getter. But you'll want to run the entire series, so get the set of three stereos—sent postpaid to you for a dollar

tric show rooms in this part of the country.

Hutton & Souter, architects, Banks of Hamilton Building, Hamilton, are in charge of the alterations and extensions, which work is now under way. V. K. Stalford is in charge of the electrical installation and equipment. The contract for the electrical work in this building has been awarded to Culley & Breay, 35 King St. West.

The electrical installation in this building will consist of a substation in the basement with a capacity for five 50 K. W. single phase transformers. The service will be 3 phase 220 volt, 25 cycles. Provision has been made for 100 K. W. electric heating.

The show rooms for the display of electrical apparatus will be fully equipped for the demonstration of all electrical apparatus, including electric ranges, ironers, grates, and water heaters. Owing to the low cost of power there is a great demand for these appliances in this district and they hope with their new and large show rooms that it will be increased to a much greater extent.

Status of Fixture Dealers

Important Points About Association Work Brought Out in Survey

Charles H. Hofrichter, business manager of the Lighting Fixture Dealers' Society of America, has made a survey of the work of this organization, and in a series of letters to the membership he brings out many important points and lays down certain fundamentals that have proved the need for such a group work.

As to the past achievements of the Society, Mr. Hofrichter says: It has taken the lighting fixture dealers that heretofore had no organization through which they might speak for themselves and given them a means of articulation. It gave birth and established a means at headquarters where the members might make known their wants, exchange ideas, become acquainted with each other, have contact with other kindred interests, devise means of bettering its own method of doing business, and coöperating generally in a modern way.

The secretary believes that the degree of importance of the group work should be measured by the amount of strength it has. In addition to purity of motive and purpose it has a strong economic position and sells service as well as merchandise, says he, and on the two last points he comments:

The average dealer considers himself a small merchant. He feels that his buying power is limited. His field of distribution is within the comparatively small radius of his store, which somehow makes him feel that his influence is more or less of a minor quantity. He particularly feels that because his financial rating is not up to the A-A class that the place he fills is not important.

But listen, have we ever stopped to consider how many representatives of the manufacturers and jobbers who are rated in the A-A class come into your store in the course of a week? Count them. Wanting to sell you something, you say? Yes and No. They do want to sell you their wares, but at the same time in doing so, what they are actually doing is trying to buy your influence and your service in the community which you serve, and in which they

have no local touch or personal contact. That is as much a part of your capital and stock in trade as is the machinery in the plant of a manufacturer.

The dealer is important. His opinions do carry weight and influence. Go to the offices of the sales managers of some of these large concerns from whom you buy. What do we find one of the biggest items of interest? Why the news of the field. Salesmen's reports. What is the trade saying? What new things are they demanding? What new business methods will appeal to them? These are among the live items of interest to be found in the sales manager's office.

Why bless your soul, more sales policies are developed in the stores and offices of the small dealers throughout the country than you have any idea of. Therefore, the dealer has a tremendous economic power, which as an individual

Our New Word

—The word *Electragist*, meaning "a leader in the electrical contractor-dealer business," is registered as a trademark by our Association and only active members can use it.



The Electragist Practices High Standards

Whenever you deal with an *Electragist* you get a square deal. You can be sure of that. An *Electragist* knows the electrical contractor-dealer business. He knows his costs; his overhead; his turnover; and his customers get the benefit.

These are the reasons an *Electragist* can practice high standards. And he *does* this because he knows that maximum profit results to himself as well as to the customer only by so doing.

You can depend on our high practice standards in wiring or merchandising

(NAME)
ELECTRAGIST
(ADDRESS)

Send in your order for a set of these stereotypes—three in all—one dollar postpaid. You'll agree it's pretty hard to beat such a series of ads to run in your local newspaper setting forth the high grade service of your company

he does not realize but which if coupled with thorough organization and intelligent leadership will greatly augment his present business possibilities.

It should be one of the strong points of the organization to sell to its members service. There are certain operations, customs, supplied and conditions which every lighting fixture dealer has in common, and on which a great many dealers have spent considerable sums of money to work out a solution to meet their individual needs.

A careful analysis of the problem indicates that while one plan will not meet a universal need, it does meet a large percentage of it. For instance the average lighting fixture dealer finds it difficult to work up a suitable advertisement for his own local town paper, calling attention to the need for better lighting in the homes, offices, stores, etc. Such advertisements could be prepared at the national headquarters office and furnished to the dealer in such form that he could very easily take it to the local newspaper office where the dealer may insert and run it as his own exclusive ad.

This service could be rendered to the dealer at a very small fraction of the cost which he would otherwise be put to, provided it was done on a large scale at the national headquarters.

Our cost cards and workmen's time cards are also an indication of this service that could be rendered. In fact the underlying thought of the psychology of present-day business is Service Rendered not Merchandise Sold as much as Service Rendered. If the organization is to live, it must count as one of its greatest possessions of strength the fact that it is rendering real service to its constituent members.

Concerning the Society's future Mr. Hofrichter has some definite ideas which he expresses as follows:

The past is one of the best evidences of the future, and no matter what we may think of the past achievements and work of the organization it is splendid in comparison with the problems that faced it. Therefore, one of the most desirable prospects that we have before us today is a still more complete organization, embracing a great number of lighting fixture dealers throughout the country. Even the farmers can organize into effective groups and they are not considered business men. We are business men, and considered as such, therefore we must do it. It is expected of us.

Timely Advertisements

An interesting series of advertisements in newspapers is being run by the United Electric Light & Power Company of New York City promoting the convenience outlet. A characteristic display shows duplex sockets and under the heading "Electrify the Home" the use of these devices is explained. This advertising is made to tie in with the special home wiring plan that this company has been promoting.

Electricity in Africa

Africa is far less advanced along electrical lines than most people even suspect, according to Herbert H. Markham, who recently completed a year's trip that carried him on a route of 30,000 miles through that continent.

Mr. Markham, who made a thorough investigation of the possibilities of Africa in behalf of his company, the Western Electric Company, Ltd., of

London, and of the International Western Electric Company of New York, reports that with the exception of the large electrical plant employed in the gold and diamond mining industries in South Africa, there is very little electrical development in the whole country apart from ordinary lighting schemes.

N. E. L. A. in New York

It is announced by the executive committee of the National Electric Light Association that the next annual convention of that organization will be held in New York City, and the date is tentatively set early in June.

Hotel Commodore has been selected as the official headquarters, where all meetings probably will be held, with the exception of the public policy meeting, which it is expected will take place in some place offering much larger accommodations.

Over the Top in 1922

In the opinion of O. Fred Rost of the Newark Electrical Supply Company of Newark, N. J., the year 1922 has survived the usual attack of spring fever; has passed through a long siege of vacationitis and strikeitis and in spite of additional complications from summer static, is again rolling along at a speed which bids fair to establish new records. He goes on to say that business in general is beginning to show the great amount of good done by the house cleaning of the last eighteen months. There are more construction jobs awaiting the wide awake electragist than most of them care to take or can take care of. The appliance business is on a healthy basis and shows



The first employees outing of the J. & M. Electric Company, of Utica, N. Y., was a howling success. President M. H. Johnson, "Electragist" originator, who is an International promoter as well, was master of ceremonies and saw to it that everybody had the time of their young lives. Especially was it enjoyed by the Original Electragists—two pretty lassies who, khaki clad, came to the scene of activities on the radiator of a lowly Ford

good profits to those who treat it as an important adjunct to the contracting business. The radio business has had a most welcome house cleaning with most of the undesirable manufacturers and dealers eliminated.

In other words, looking at the business sky with a pair of powerful binoculars, we cannot see a single cloud threatening those who do business in a wholesome and businesslike way. The last months of the year are at hand, and every electragist should in those months go over the top in so far as volume is concerned, to say nothing of making a record for profit.

Keeping Faith

In Code Chats in this issue under the heading Substandard Switch Plates, Mr. Wynkoop has casually touched upon a fundamental ideal which should inspire all true electragists. And it would not be amiss if all inspection departments as well adopted as their slogan the same motto—Keeping Faith with the Industry.

According to Mr. Wynkoop, some manufacturing interest made and sold a substandard product which was obviously inferior and with only experimental use would have shown dangerous results. But it found an outlet to the public, and only through the careful effort of inspectors has it been condemned so that no trace of its use in the electrical industry at the present time is found.

The question now arises: Should such an article, plainly marked to show its noncompliance with the National Electrical Code in addition to bearing no name of a manufacturer, be approved if it does prove safe so far as its practical use in electrical work is concerned? As suggested by Mr. Wynkoop, would it not be a breach of faith with the industry as a whole to approve it?

This applies to much more than the specific article under discussion. A. Penn Denton of Kansas City, chairman of the Code Committee of the National Association, recently emphasized the same idea when he urged his fellow electragists to insist always upon Code standard materials and methods.

Central Station Movie

A motion picture of its service activities has been completed by the Boston Edison Company. It is expected that the film will be shown extensively this winter to the residents of its territory in order to demonstrate more

clearly the meaning of all of the company's important work.

The film, which was prepared under the direction of L. L. Edgar and J. J. Caddigan, assistants to the general superintendent, W. H. Atkins, pictures the fundamentals of mining, transporting, storing and burning coal for electrical generation, the handling of turbo-

generating and electrical equipment, work of construction and maintenance forces, activities of engineering and sales employees, trouble hunting methods, welfare work, and other activities done on the company's lines. In addition to these varied operations, the use of electricity in the home is a feature of the film. Only company employees are shown in the pictures.

Guaranteed

That is what an Electragist does. No matter what your need is—no matter who you are. If you want an electrical service that will be guaranteed—

*Get An Electragist
To Do It For You*



The word Electragist, meaning "a leader in the electrical contractor-dealer business," is registered as a trademark by our Association, and only active members can use it.

Every Electragist's service is dependable and trustworthy. He is qualified to make it so. His experience coupled with his superior knowledge puts him in a position to do work that's *guaranteed*. His high practice standards won't permit anything else.

(NAME)
ELECTRAGIST
(ADDRESS)

Isn't this ad a pipp? And remember you can get all three sizes of stereos for a dollar—sent to you postpaid from the Headquarters of the Association

Become an Electragist

In a recent bulletin Minnesota State Secretary Arthur P. Peterson asked the contractor-dealer interests of the Twin Cities, Minneapolis and St. Paul, if they ever saw a newspaper come out with these headlines:

*Electrical Contractor and
Dealer Retires*

Any City, Minn.:

The well known electrical contractor and dealer, Mr. John Parsons, who has been in business at 1202 Main Street of this city, for the past twenty-five years, is retiring from business to enjoy the fortune he has accumulated during that time.

Mr. Parsons says he owes his success to his knowledge of the business. He was never known to take a job at a price that did not afford him a profit of 10 percent, and he always rendered 100 percent service in return. He knew what it cost him to do a job and he knew what it cost him to do business. And best of all he applied that knowledge.

With Mr. Parsons' retirement, the industry loses a man who never spoke a word against a competitor. His business life was one of cooperation and his constant aim was to raise the electrical game from a trade to a profession.

Then the secretary goes on to say: But somehow or other we never read such an article. Isn't it high time that we take inventory and determine to do something to better ourselves? The building contractors, the real estate men, the architects, and the general public will not do it for us. It looks very much like its up to us.

News Notes Concerning Electrical Contractor-Dealers

Business Changes, Store Improvements, and New Establishments Opened

Clyde River Power Company, Incorporated in the electrical business at Newport, Vermont, will issue stock to the amount of \$100,000 in about a month.

Theobald-Jansen Electric Company, successor to the Harry I. Wood Company, located at 328 West Main Street Louisville, Kentucky, is in market for electrical supplies. Estimate worth of business, \$75,000.

T. Wilson Ille Electric Corporation, in the electrical appliance business at

109 East 23rd Street, New York City, is opening a branch store at 126 West 28th Street.

MacMillan Company, Incorporated, will carry a full line of electrical appliances at 2431 Garfield Avenue, Minneapolis, Minnesota. Incorporated capital, \$50,000. Incorporators: R. A. MacMillan and others.

Rich-Chaplin Electric Company is reported to have opened a new electrical supply business at the Pierce Building, St. Louis, Missouri. Incorporated capital, \$40,000.

Meade Electric Company will locate at 3253 West Madison Street, Chicago, Illinois. Incorporated capital, \$33,000. Old concern..

Blackstone Electric Supply Company, Providence, Rhode Island, is open for business. Incorporated capital, \$25,000. Incorporators: D. Prescott, 1404 Broad Street, Providence, and others.

L. R. Klose has established headquarters at Kalamazoo, Michigan, where a full line of electrical supplies will be carried. Increased capital from \$20,000 to \$50,000.

The Brown Electric Company will feature a complete line of electrical appliances at 106 Howard Street, Spokane, Washington. Incorporated capital, \$25,000.

Keifer Electrical Supply Company of which Walter R. Keifer and others are incorporators, is open for business at 302 South Washington Street, Peoria, Illinois. Incorporated capital, \$30,000.

Dawkins Electric Company of which B. F. Dawkins is proprietor, will move to new building at 141 South Third Street, Memphis, Tennessee, where an extensive line of electrical appliances will be carried, estimated to be worth \$25,000..

Genuine Electrical Equipment & Service Corporation has established headquarters at Modesto, California. Incorporated capital, \$25,000.

H. S. Douglas, Incorporated, an old established electrical concern, is open for business at Clayton, New York. Incorporated capital, \$10,000.

Henderson Electric Company will locate at the Richmond Hotel Annex, State Street, North Adams, Massachusetts.

G. L. Craig Electric Company will locate at the Ferguson Building, Pittsburgh, Pennsylvania. Incorporated capital,

ital, \$25,000. Incorporators: Chas. A. Wilson, 3409 Terrace Street, Pittsburgh, and others.

Ayres Electric Company has established headquarters at Piqua, Ohio. Incorporated capital, \$10,000. Incorporators: H. Cooper Ayres and others.

Humboldt Electric Station, of which William F. Cookson is manager, is

opening a new electrical supply store at 219 Fifth Street, Eureka, California.

Capitol City Electric Company will open an electrical supply store at 221 East Ohio Street, Indianapolis, Indiana.

Electric Service Repair Company will carry a complete line of electrical appliances at new headquarters located



The word *Electragist*, meaning "a leader in the electrical contractor-dealer business," is registered as a trademark by our Association, and only active members can use it.

Safety, Service and Satisfaction—

These are the claims of an *Electragist*. Anything electrical—wiring or merchandise—your need matters not. An *Electragist's* knowledge of every phase of the electrical contractor-dealer business gives you complete assurance of safety, service and satisfaction in any work he does for you.

Every high standard of practice is maintained by an *Electragist*—such principles are synonymous with the meaning of the term. An electrical contractor-dealer, thus privileged to distinguish himself, knows the folly of maintaining any but high practice standards at all times.

Let us prove to you that we assure you **SAFETY, SERVICE**
and **SATISFACTION** in any electrical service.

(NAME)
ELECTRAGIST
(ADDRESS)

Don't wait to begin your advertising campaign to link up your superior service with the new name. *Electragists* are being recognized—and patronized! Get on the band wagon with the others. The designs shown in this series of ads are to distinguish you. The three sizes of stereotypes cost you only one dollar, postpaid

at 99 Broadway, Paterson, New Jersey. Incorporated capital, \$20,000. Incorporators: A. J. Bennett, and others.

The Wolfe & Mann Manufacturing Company has opened a new electrical supply store at 320 South Hanover Street, Baltimore, Maryland. Incorporated capital, \$10,000. Incorporators: Eugene O. Wolfe, 1210 Eutaw Place, and others.

Motor Ignition & Parts Company is opening a new store at Philadelphia, Pennsylvania, where an extensive line of electrical and auto-motive supplies will be handled. Incorporated capital, \$50,000. Incorporators: Herbert F. Banner, 1617 West Master Street, and others.

Merrill & Rideout, Incorporated, an old established electrical concern at Boston, Massachusetts, will feature a full line of electrical supplies and appliances. Incorporated capital, \$10,000. Incorporators: Herbert V. Merrill, 19 Eastman Road, Boston, and others.

Green & Taylor Electric Company is scheduled to open new electrical appliance store at Whitesburg, Kentucky, about November 1st.

Offer & Keller's Electric Shop is open for business at 230 Main Street, Mt. Vernon, Indiana.

Beaver Electric Company of which E. W. Pierce is proprietor, has remodelled store and enlarged electrical supply stock to be carried at new headquarters, 114 Grand Avenue, Portland, Oregon. Incorporated capital, \$10,000.

Jacob H. Cooper will occupy new building at Madison Street, Westwood, New Jersey, where garage and electrical supplies will be handled.

Gabel Electric Company will locate at 500 Fifth Avenue, New York City. Incorporated capital, \$15,000. Incorporators: Attorney F. W. Burr, 256 Broadway, and others.

Franklin Electric Company has established headquarters at Franklin Missouri. An extensive line of electrical supplies will be handled. Incorporated capital, \$20,000.

Ulrich Electric Company will erect building on North Minnesota Street, New Ulm, Minnesota, where a complete line of electrical merchandise will be carried.

B-R Electric Company will erect five story building at 1411 Walnut St., Kansas City, Missouri, and move to same when completed. Electrical supplies will be featured.

Radio & Specialty Company will locate at 404 Jefferson Street, Burlington, Iowa. A full line of radio and electrical supplies will be carried. Incorporated capital, \$10,000. Incorporators: Fred E. Scholer, and others.

Lain Electric Service Company is open for business at Louisville, Kentucky. Incorporated capital, \$10,000. Incorporators: H. I. Fox, and others.

F. W. Ambroz will occupy new building at Main Street, Fairfax, South Dakota, where an extensive line of electrical supplies will be carried. In market for electrical supplies.

Harry Newman is opening business at new building, Elko, Nevada. Mr. Newman will handle a complete line of electrical supplies.

H. P. Dean, successor to the Delphos Electric Supply House, will continue to conduct electrical supply business at Delphos, Kansas.

Poellnitz Electric Service Corporation has established headquarters at New Rochelle, New York. Incorporated capital, \$10,100. Incorporators: Wm. C. Poellnitz, 85 North Avenue, and others.

Universal Electric Company is opening a new store at Philadelphia, Pennsylvania. Incorporators: Bronte Greenwood, 6724 West Carlisle Street, and others.

Homes Electric Store Company will locate at the Main Street Theatre Building, Kansas City, Missouri.

The Wilmington Electrical Company of which D. M. Peterman is manager, is opening a new store at 309 Canal Avenue, Wilmington, California.

Federal Electric Shop will move to 126 South Third Street, Louisville, Kentucky, where a full line of electrical appliances will be carried.

Whiffen Electric Company is open for business at White Plains, New York. Incorporated capital, \$25,000. Incorporators: Attorneys Williamson and Bayles, 115 Broadway, New York City, and others.

An Effective Tie In

We are all familiar with the value and necessity of tying in, and it is surprising that so many of us let so many of the good chances to do so get by.

It remained for D. P. Robinson of the United Illuminating Company of New Haven, Connecticut, to put across one of the prettiest and most effective

samples of tie in that New England has ever seen.

There is no question as to the popularity of Mary Pickford in the hearts of the public at large. The opportunity of capitalizing upon this condition



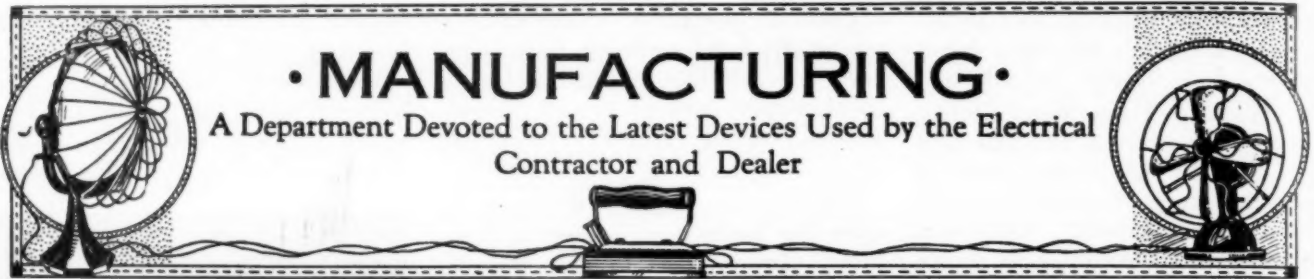
Sales Were Immediately Increased Through This Display

in the sales of electric clothes washers, while frequently present, had failed to impress others of its value. The accompanying photograph speaks for itself and tells in good style how Robie greatly increased the sales as well as endeared the clothes washing machine to many of the good folks who came to see the popular motion picture actress.

A large window display in the office of the United Electric Illuminating Company of Miss Pickford and of the picture in which she was appearing, together with a clothes washing machine full of water and soap suds, in operation at the entrance of the theatre, did the work. Plenty of descriptive literature, and a wide awake salesman or two on the job all the time, developed sufficient prospects for follow up work for many a day.



Here's the Chap Who Kept Things at the Convention Pepped up Every Minute—Chas. M. Betzhoover. He Was Local Chairman of all Committee Activities



New Steel Case Battery

An announcement which is proving exceedingly interesting and beneficial to dry battery users and to the trade in general was recently made by the Na-

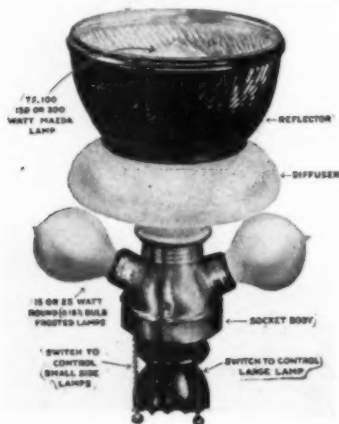


tional Carbon Company, Inc., Long Island City, N. Y. The popular type Columbia Hot Shot Battery, which up to the present time has been sold in a fiber container is now being put on the market in a new steel container.

This new battery is an improvement over the old type which it replaces. Important advantages claimed by the manufacturers include the following: Constructed to withstand the roughest service; unaffected by exposure to the elements; prevent internal short circuits; full service and life assured through the protection of the battery by the steel case; a new woven fabric handle for comfort, strength and convenience.

New Lamp Adapter

The X-Ray Curtis Adapter is a new product of the National X-Ray Reflector Company of Chicago which is furnished complete as a package unit for the trade to sell from stock.

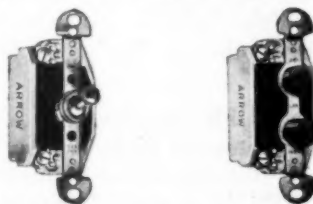


The X-Ray Curtis Adapter is a new design of the indirect lighting adapter that has been popular for many years.

It is small and can be used with 75, 150 or 200 watt lamps. It is a complete unit and can be attached to any floor or table pedestal to make the lamp not only give the usual decorative local lighting but flood the room with light, making it unnecessary to use ceiling fixtures. Though appropriate for living rooms, dens, libraries and the like, it can also be used with artistic and novel effect in reception rooms to offices, small shops, stores, etc.

New Shallow Switches

A new line of Shallow Flush Switches with porcelain cup has been developed by the Arrow Electric Company of



Hartford, Conn., and is now placed on the market. As the porcelain cup is only one inch deep it is shallow enough for easy wiring in thin partitions.

Although designed especially for metal lath and shallow partition work the new switches are adaptable for general work. The line is made for both push button and toggle types and is sold at regular prices.

Modern Home Washer

The Modern Home Washer, manufactured by the Home Devices Corporation of New York City, is a compact, practical and efficient machine. A feature is its noiseless qualities. By fitting in any tub, it occupies no floor space, and the matter of carrying water is eliminated.

When not in use it can be stored inside of the tub, thus allowing the use of tub covers. No oiling of gears is necessary as oil tight safety gear cases are filled with hard grease. The cylinder reverses automatically, allowing clothes to unfold. While the units are light to lift the device is compact and is of strong construction.

The Modern Home Washer is guar-

anteed against defects of materials and workmanship for a period of one year with ordinary use. Either alternating or direct current can be used.

Condensed Notes of Interest to the Trade

The Johns-Pratt Company of Hartford, Conn., announces the appointment of George V. W. Ingham as eastern sales manager for the electrical division. He will make his headquarters at the New York office of the company in the Liggett Building, 41 East 42nd Street.

New catalogs issued by the Century Electric Company of St. Louis cover the following subjects. Polyphase motors, type AS; split phase motors; polyphase motors, type SC; and single phase motors, type RS.

With deep regret the death of Frank M. Hawkins is announced by the Crouse-Hinds Company. Mr. Hawkins' active connection with this company for more than twenty-five years had much to do with the building of the business.

Howard Cole Hakes has joined the forces of the Betts & Betts Corporation, New York City, to cover the state of New York and New York City territory as special sales representative.

W. H. Rolinson has been appointed manager of the interior lighting section of the merchandising department of the Westinghouse Electric & Mfg. Company, according to an announcement made by W. S. Rugg, general sales manager, who has just acceded to this position from his former position of assistant to the vice president. Other changes in this company affecting district offices are as follows:

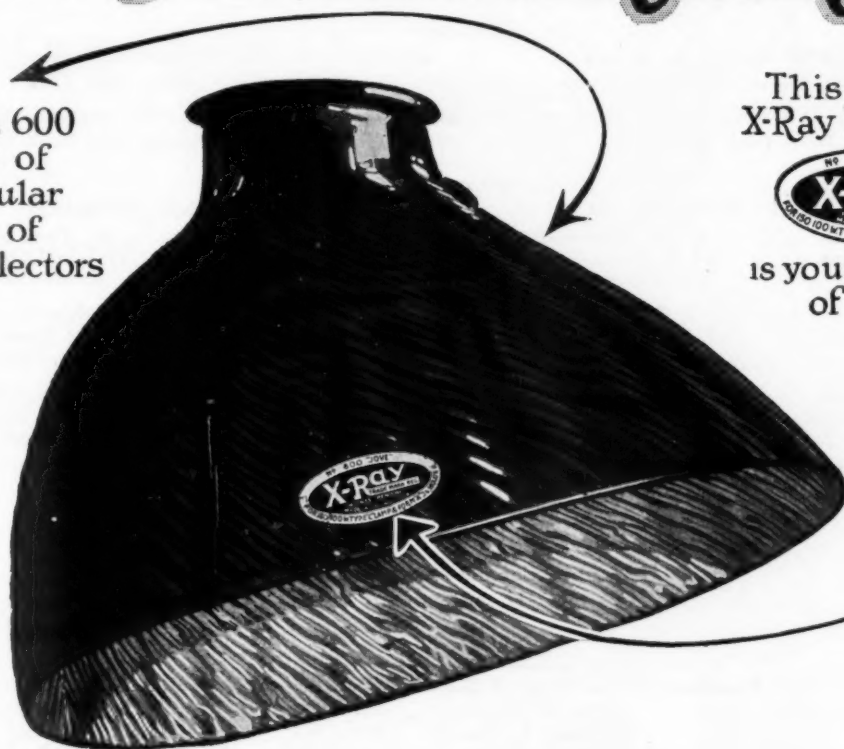
C. W. Underwood of the Buffalo office becomes northern representative, and A. E. Allen of the New York office takes charge of the Buffalo office. A merchandising division in many of the offices has been established.

"He's an amateur Edison. His house is full of electrical devices."

"A regular electric fan, eh?"

For Every Window Lighting Effect

Jove No. 600
is one of
the Popular
types of
X-Ray Reflectors



This label on
X-Ray Reflectors



is your guarantee
of quality

X-Ray Reflectors

EVERLASTING BRILLIANCY

THE STANDARD FOR SHOW WINDOW LIGHTING

For twenty-five years X-Ray Reflectors have been superior for Show Window Lighting. There is now an X-Ray Reflector for every type of show window, and for any lighting effect. For Holiday display use—

COLOR LIGHTING

To emphasize the spirit of the display and strengthen its selling appeal use color lighting with the X-Ray Color Ray.

SPOTLIGHTING

An intense spot of white or colored light is sure to focus special attention to the leading article of your Holiday display.

FOOTLIGHTING

Wax Forms, especially, look more natural when shadows are eliminated by using X-Ray Show Window Footlights.

NOW'S THE TIME FOR HOLIDAY WINDOW LIGHTING.
LET US HELP YOU PLAN IT.

NATIONAL X-RAY REFLECTOR COMPANY

NEW YORK
31 W. Forty-Sixth Street

CHICAGO
229 West Jackson Boulevard

LOS ANGELES
Pacific Finance Building

ENGINEERS IN ALL PRINCIPAL CITIES

An X-Ray Reflector for Every Lighting Need!

ASSOCIATION OF ELECTRAGISTS

INTERNATIONAL

Formerly National Association of Electrical Contractors and Dealers

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Ernest Freeman-----1912-1914
*Deceased.

John R. Galloway-----1914-1916
Robley S. Stearnes-----1916-1918
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UNIVERSAL DATA AND SALES BOOK

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10 S. Second Street, Memphis, Tenn.

U. S. CHAMBER OF COMMERCE

Robley S. Stearnes
336 Camp Street, New Orleans, La.

Here's the New Curtis Adapter



Catalog No. 3000

Price \$14.00

(Ask for Discounts)

ONE-HALF ACTUAL SIZE

Diameter only 6 inches.
Height over all adjustable
from 8 1/4 to 9 1/4 inches.

For 75, 100, 150 or 200 watt Mazda
"C" lamp inside the Reflector for
Indirect Lighting.

For 2-15 or 2-25 watt round (G 18 1/2
Bulb) frosted lamps on side for
Usual Art Lamp Lighting.

THEY COME IN
PACKAGES



It makes art lamps *useful* as well as decorative.

A Curtis Adapter will give the usual local lighting of the ordinary art lamp or completely *flood the room with light*.

Use it for homes, clubs, theater foyers, shops, stores, in fact, wherever the novelty of lighting from artistic lamps is wanted.

For 300 or 500 watt lamp use Adapter No. 2852.

For standard candle fixtures Adapter No. 2900 uses a 50 watt mill type lamp.

Write for literature that will help you sell these three adapters!

National X-Ray Reflector Company

"THE CLEARING HOUSE FOR LIGHTING IDEAS"

NEW YORK
31 W. Forty-Sixth Street

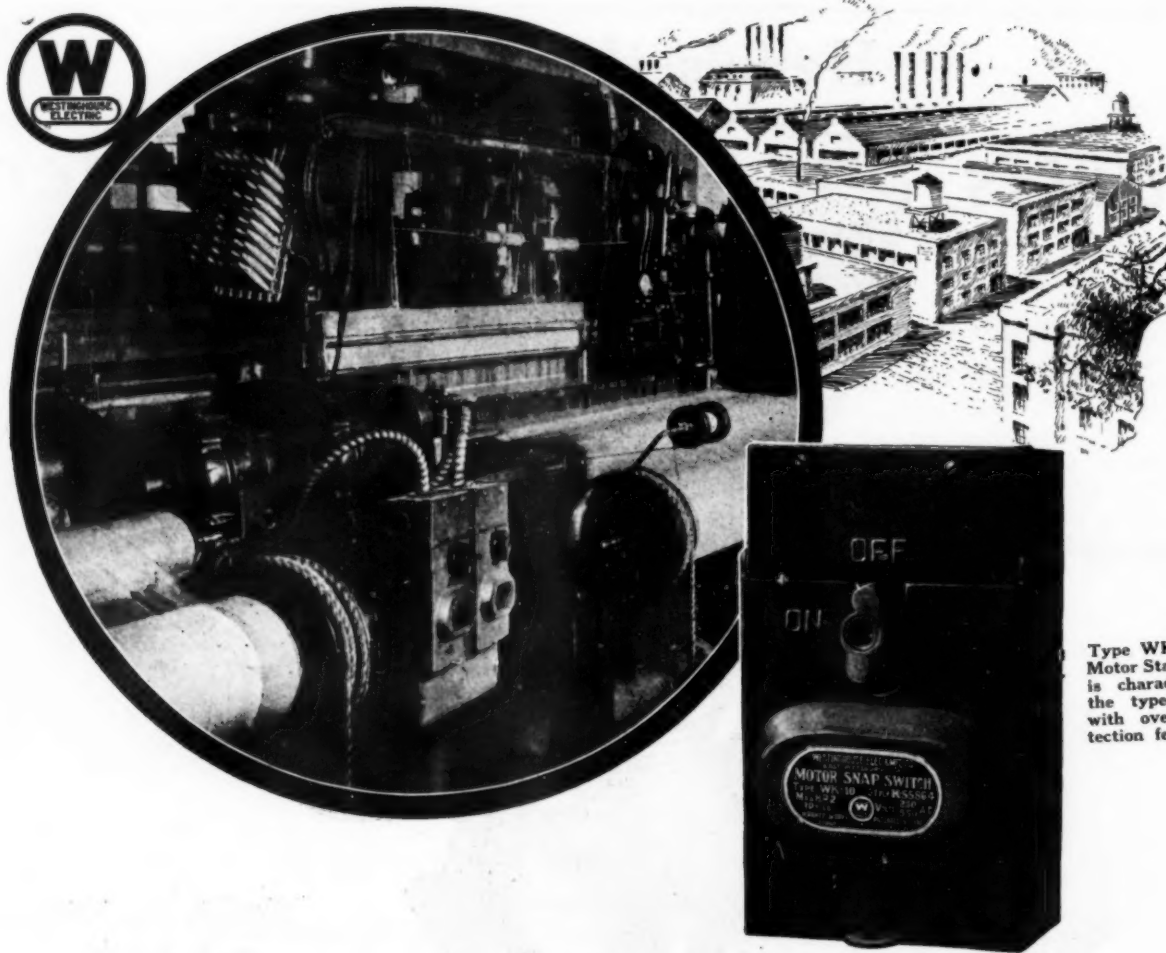
CHICAGO
229 W. Jackson Boulevard

LOS ANGELES
Pacific Finance Building

Engineers in all principal cities

A PACKAGE LINE, JUST LIKE THE X-RAY EYE COMFORT LIGHTING LUMINAIRES





Type WK-10 Safety Motor Starter, which is characteristic of the type furnished with overload protection features.

Safeguard Your Motors from Burnouts

Westinghouse Type WK Safety Motor Starters give real protection to the motors you sell

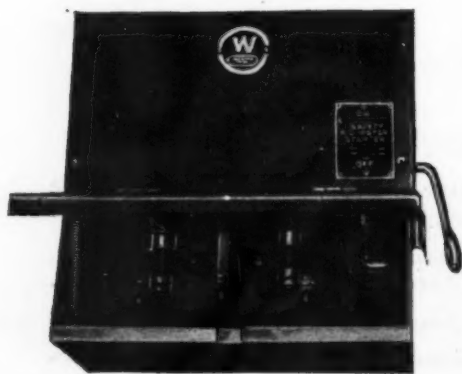
Contractor-dealers who are selling motors up to 15 hp. to your neighborhood industrial shops should know all about the WK Type Safety Motor Starters.

These low-priced, yet thoroughly dependable starters, prevent motor burnouts, shutdowns and interruptions. Besides safeguarding the motor they are 100% safe for the operator, as live parts cannot be touched under any circumstances.

Type WK Safety Motor Starters are available in sizes up to 15 hp. with low voltage release and overload protection. They can also be furnished up to 10 hp. with overload protection only.

Make an added profit on motor sales and give your customers real motor protection by installing a WK Safety Motor Starter on every job.

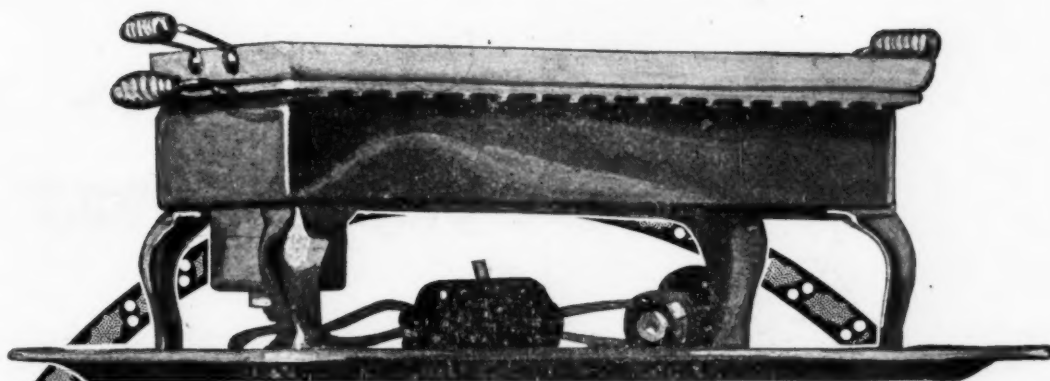
Write for bulletins giving full particulars.



Type WK-100 Safety Motor Starter, furnished with low voltage release and overload protection.

Westinghouse Electric & Manufacturing Company
EAST PITTSBURGH, PA.

Westinghouse



Now the Table Stove Instead of the Toaster Stove

The name only has been changed. The stove still maintains the same characteristics which have made it so popular in the home. The name "Table Stove" will add to the popular understanding of this appliance, because the old name conveyed but a single-use idea.

The "Table Stove" will make a pleasing and attractive, as well as a worthwhile gift for Christmas. A two-color advertisement in the November 11th issue of "The Saturday Evening Post" will be read by more than two and a half million persons—each one is a prospect. Tie-in with this attractive and forceful advertisement.

The selling points of the Table Stove are many:

1. The many applications of the table stove make it a very desirable appliance in the home.
2. Clean and convenient in operation.
3. Rugged construction assures long life.
4. In design it is pleasing and attractive.
5. The cost of operation is low.
6. Does not throw off any fumes when in operation.
7. Highly nickel-finish makes it easy to keep clean.

Westinghouse Electric & Manufacturing Company
Mansfield Works, Mansfield, Ohio



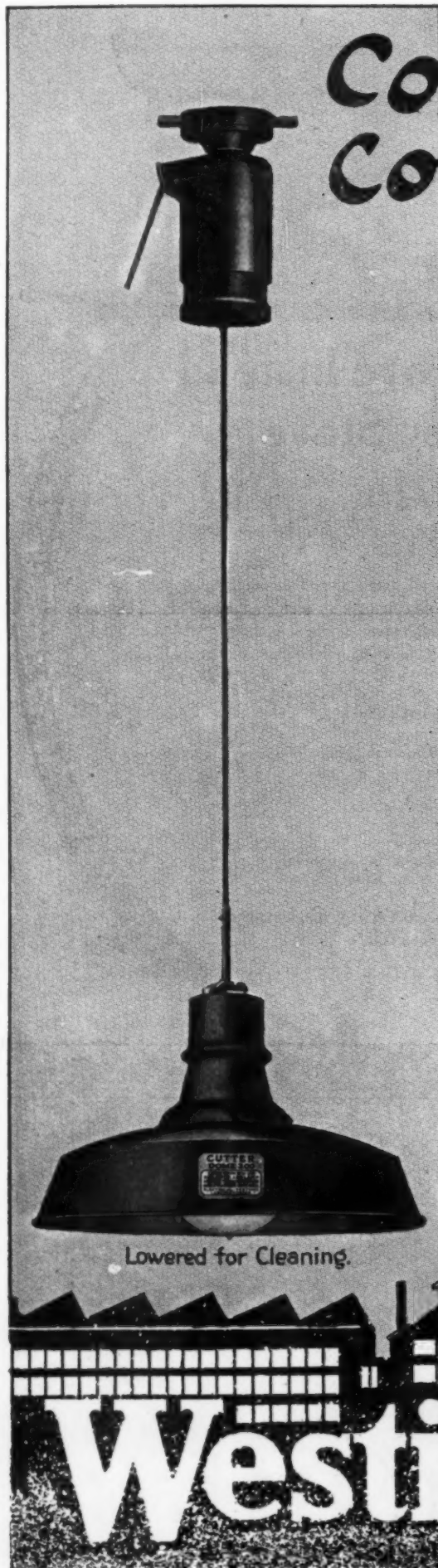
Conditions are Now Corner Your Industry

There are many contractor-dealers who have never given much thought to their industrial lighting market; many dealers, too, have not gone after this business in the way they should.

Industrial lighting today, to the live dealer with the right kind of equipment to sell, offers a field for profit that is second to none.

This business can be easily cultivated, especially when you are selling Westinghouse-Cutter Pulley-Socket Reflectors (at the left) and Holder-Socket Reflectors (at the right), because they fill exactly today's requirements in industrial lighting. Their special features are listed on the opposite page. A glance through them will convince you that the selling points are all here.

The plants, shops and factories in your town are now putting their lighting equipment in shape for the dark winter days when artificial light is needed to do the best work. Naturally, this is the ideal time to approach these prospects and sell them modern and economical lighting equipment—Westinghouse-Cutter, of course.



Lowered for Cleaning.

Westinghouse

Prime for You to Industrial Lighting Market

Here are the features of Westinghouse-Cutter Pulley-Socket Reflectors to stress in your selling—

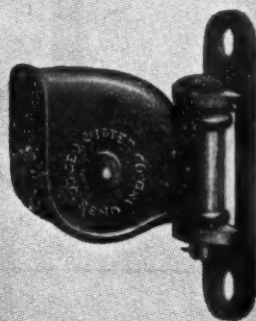
Lighting intensity and distribution of light may be altered quickly to meet shifting manufacturing conditions by (1) using different sized reflectors and lamps and (2) by using different types of reflectors. Cutter interchangeable features make these adaptations easy.

Lowering fixtures makes possible: quick and thorough cleaning—avoids the danger attending the use of ladders, cranes, or other means of reaching stationary fixtures—complete protection for the lamp cleaner from electrical contact—less obstruction of aisles and passage ways.

It may seem to you that industrial lighting is a complicated affair and something that only an expert can perform effectively, but such is not the case. With a copy of Westinghouse-Cutter "Handy Wiring Tables and Illumination Data" you can quickly and accurately specify the kind and amount of equipment each prospect will need. Get a copy today.

We'd like to show you the possibilities in the industrial lighting field, and how to develop them. Write our nearest district office or direct.

Westinghouse Electric & Manufacturing Company
George Cutter Works, South Bend, Ind.



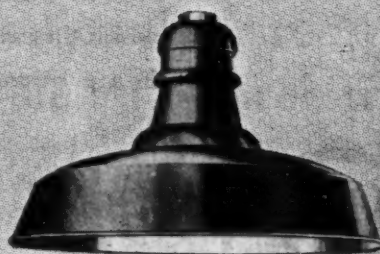
Swivel Pole Pulley



Standard Angle Type

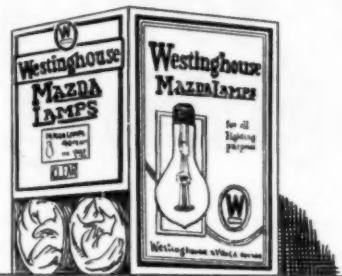


Standard Bowl Type



RLM Standard Dome Type





Not One— Six!

That's the way to sell lamps.

When a customer asks for "a" lamp, do you sell him only "a" lamp, or are you a Westinghouse Dealer?

Westinghouse dealers sell lamps by the "box of six,"—that handy box with a vending flap which, when

open, leaves two wrapped lamps exposed to view. Remove one of the lamps and another drops down to take its place.

The package is not only a convenience to the customer; it makes an attractive display whether in the window or on the shelf.

NOTE: Westinghouse dealers because of the cooperation which they receive from our Illumination Bureau are always in a position to handle the largest installations.



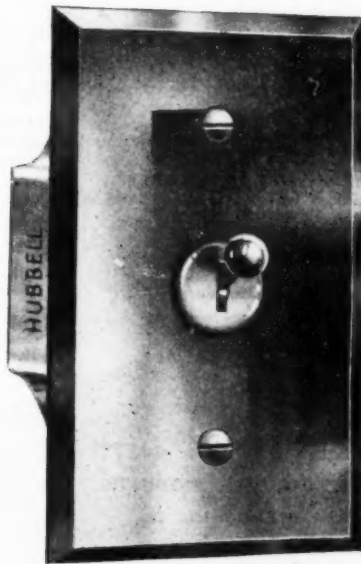
WESTINGHOUSE LAMP COMPANY

165 BROADWAY, NEW YORK, N. Y.

Sales Offices and Warehouses Throughout the Country
For Canada: CANADIAN WESTINGHOUSE CO., Ltd., Hamilton, Canada.

Westinghouse

HUBBELL



Single Pole 8141
3-Way 8143
Plate 8401



Body only
8141 Single Pole

"8141" Toggle Flush Switch

Neat in appearance, easy and reliable in operation. Have porcelain body, with contact screws large and easily wired.

Made Single Pole and Three-way in 5 Amperes—125 Volts and 3 Amperes—250 Volts; also Three-Way in 10 Amperes—250 and 125 Volts, and 5 Amperes—250 Volts.

Imprinted Circulars

Write for *Imprinted* copies of Circular No. 216 showing our complete Toggle Switch line. The imprint carries *your* name and address into the homes of your customers. How many shall we send you?

HARVEY HUBBELL^{INC}
ELECTRICAL SPECIALTIES
BRIDGEPORT  CONN. U. S. A. 2320° U.

ELECTRICAL SPECIALTIES

BUYERS' GUIDE

of some of the products manufactured by the concerns advertising in this issue. To be listed here is a badge of reliability. To buy from here is a guarantee of satisfaction. When you buy from here please mention the NATIONAL ELECTRAGIST

FLOATING BATTERY SYSTEM

Valley Electric Co.

ADAPTERS, LAMP

Bryant Elec. Co.
General Elec. Co.
Hubbell, Inc., Harvey

ADJUSTERS, CORD AND LAMP

McGill Mfg. Co.

ALARMS, BURGLAR, FIRE

Conn. Telephone & Elec. Co.
Ostrander & Co.
Partrick & Wilkins Co.
Stanley & Patterson.
Western Elec. Co.

ANCHORS, GUY, ALSO RODS

Richards & Co., Geo.

ANNUNCIATORS

Ansonia Elec. Co.
Conn. Telephone & Elec. Co.
Edwards & Co., Inc.
Ostrander & Co., W. R.
Partrick & Wilkins Co.
Stanley & Patterson.

ARRESTERS, LIGHTNING

General Elec. Co.
Westinghouse Elec. & Mfg. Co.

ASBESTOS WOOD

Johns-Manville, Inc.

ATTACHMENTS, SOCKET

Hubbell, Inc., Harvey

BATTERIES, DRY

Manhattan Elec. Supply Co.
Stanley & Patterson.

BATTERY CHARGING OUTFITS

Nat'l. Carbon Co.
Valley Electric Co.

BELLS, ELECTRIC

Ansonia Elec. Co.
Connecticut Tel. & Elec. Co.
Electrical Sales Co.
Manhattan Elec. Supply Co.
Ostrander & Co., W. R.
Partrick & Wilkins.
Schwarze Elec. Co.
Stanley & Patterson.

BENDERS, CONDUIT

Steel City Elec. Co.
Thomas & Betts Co.

BLOCKS, MOLDING

Bryant Electric Co.
Roberts Elec. Sup. Co., H. C.

BOOKS, ELECTRICAL

Audel & Co.
National Ass'n Elec't. Con. & Dealers.

BOLTS, TOGGLE

Cutter Co., Geo.
National Metal Molding Co.

BOXES, CONDUIT

Adapti Mfg. Co.
Appleton Elec. Co.
Chicago Fuse Mfg. Co.
Columbia Metal Box Co.
Cutter Co., Geo.
Hart Mfg. Co.
National Metal Molding Co.
Sprague Elec. Works.
Steel City Elec. Co.
Thomas & Betts Co.
Tucker Mfg. Co.
V. V. Fittings Co.

BOXES, FLOOR

Frank Adam Electric Co.
Sprague Elec. Works.
Stanley & Patterson.
Steel City Elec. Co.
Thomas & Betts Co.
Westinghouse Elec. & Mfg. Co.

BOXES, MANHOLE (JUNCTION)

Frank Adam Electric Co.
General Elec. Co.
Johns-Manville, Inc.

BOXES, METER PROTECTING BOXES

General Elec. Co.
Johns-Manville, Inc.

BOXES, PULL

Columbia Metal Box Co.

BOXES, WOOD OR CABINET

Stanley & Patterson.

BRACKETS, TELEPHONE

Stanley & Patterson.
Western Elec. Co.

BRUSHES

Cutler-Hammer Mfg. Co.
General Elec. Co.

BUSHINGS, BOX AND CABINET

Fralick & Co., S. R.
Pass & Seymour.
Westinghouse Elec. & Mfg. Co.

CABINETS, METAL

Frank Adam Electric Co.
Columbia Metal Box Co.
Cutter Co., Geo.
Hart & Hegeman.
Thomas & Betts Co.
Wurdack Elec. Mfg. Co.

CHARGING OUTFITS

General Elec. Co.
Robbins & Myers Co.
Valley Electric Co.
Westinghouse Elec. & Mfg. Co.

CIRCUIT BREAKERS, AUTOMATIC

General Elec. Co.
Westinghouse Elec. & Mfg. Co.

CLAMPS, CABLE SUPPORTING

Steel City Elec. Co.

CLAMPS, GROUND CONNECTION

Columbia Metal Box Co.
Fralick & Co., S. R.
General Elec. Co.
Hart Mfg. Co.
Machen Elec't. Mfg. Co.
Minerallac Elec. Co.
National Metal Molding Co.
Sherman Mfg. Co., H. B.
Sprague Elec. Works.
Thomas & Betts Co.

CLAMPS TEST

Appleton Elec. Co.

CLEANERS, VACUUM

Western Elec. Co.

CLIPS, FUSE

Bryant Electric Co.

COILS, CHOKE

General Elec. Co.
Westinghouse Elec. & Mfg. Co.

COLORING AND FROSTING, INCAN-

DESCENT LAMPS
McGill Mfg. Co.

CONCENTRIC, WIRING FITTINGS

General Elec. Co.

CONDENSERS, TELEPHONE AND

TELEGRAPH
Connecticut Tel. & Elec. Co.
Western Elec. Co.

CONDUIT, INTERIOR

Alphaduct Co.
American Circular Loom Co.
Amer. Wiremold Co.
Clifton Mfg. Co.
Enameled Metals Co.
National Metal Molding Co.
Short Elect. Mfg. Co.
Sprague Elec. Works.
Steel City Elec. Co.
Trumbull Elec. Mfg. Co.
Tubular Woven Fabric Co.

CONDUIT, UNDERGROUND

Johns-Manville, Inc.

CONNECTORS, BRASS CYLINDER

Bryant Elec. Co.
Frankel Connector Co.
Trumbull Elec. Mfg. Co.

CONNECTORS, EXTENSION CORD

Hubbell, Inc., Harvey.

CONNECTORS, FIXTURE

H. B. Sherman Mfg. Co.

CONNECTORS, SLEEVE

Bryant Elec. Co.

CONNECTORS, SOLDERLESS

Columbia Metal Box Co.
Dossert & Co.
Frankel Connector Co.
Westinghouse Elec. & Mfg. Co.

COOKING UTENSILS, ELECTRIC

Manhattan Elec. Supply Co.
Westinghouse Elec. & Mfg. Co.

COUPLINGS, SHAFT

General Elec. Co.

CUTOUTS

Arrow Electric Co.
Bryant Elec. Co.
Chicago Fuse Mfg. Co.
Columbia Metal Box Co.
Cutter Co., Geo.
Freeman Elec. Co., E. H.
General Elec. Co.
Hart & Hegeman Mfg. Co.
Johns-Manville, Inc.
Pass & Seymour, Inc.
Trumbull Elec. Mfg. Co.
Westinghouse Elec. & Mfg. Co.

DECORATIVE LIGHTING

General Elec. Co.

DYNAMOMETERS

Sprague Elec. Works

FANS, DIRECT CURRENT

Western Elec. Co.
Westinghouse Elec. & Mfg. Co.

FANS, HANGERS

Adam Electric Co., Frank

FANS, MOTOR

Century Elec. Co.
Emerson Elec. Mfg. Co.
General Elec. Co.
Manhattan Elec. Supply Co.
Robbins & Myers Co.
Sprague Elec. Works.
Western Elec. Co.
Westinghouse Elec. & Mfg. Co.

FARM LIGHTING GENERATORS

Valley Electric Co.

FIBRE

Johns-Manville, Inc.

FITTINGS, FIXTURE, IRON

Appleton Elec. Co.
Beardslee Chandelier Mfg. Co.
Benjamin Electric Mfg. Co.
Bryant Elec. Co.
Cutter Co., Geo.
Electric Appliance Co.
Fralick & Co., S. R.
General Elec. Co.
National Metal Molding Co.
Sprague Elec. Works.
Steel City Electric Co.
Thomas & Betts Co.
Trumbull Electric Mfg. Co.
Westinghouse Elec. & Mfg. Co.

FIXTURES, SHOW CASES AND

WINDOWS

Acme Lig. Fixture Co.
Artistic Lig. Fix. Corp'n.
Beardslee Chandelier Mfg. Co.
Benjamin Electric Mfg. Co.
Clinton Metal Lamp Co.
Faries Manufacturing Co.
Frink, Inc., I. P.
Frankel Light Co.
National X-Ray Reflector Co.
Planettite Co., Inc.
Shapiro & Aronson, Inc.
Weinhoff Trading Corp'n.

FIXTURE STUDS

Fralick & Co., S. R.

FURNACES, ELECTRIC

General Electric Co.

FUSES, ENCLOSED

Bryant Electric Co.
Chicago Fuse & Mfg. Co.
General Electric Co.
Johns-Manville, Inc.
Johns-Pratt Co.
Westinghouse Elec. & Mfg. Co.

FUSES, OPEN LINK

Chicago Fuse & Mfg. Co.
General Electric Co.

FUSES, TELEPHONE

Chicago Fuse & Mfg. Co.
Western Elec. Co.

GENERATORS, LIGHT AND POWER

Emerson Elec. Mfg. Co.
General Electric Co.
Robbins & Myers Co.
Sprague Electric Works.
Westinghouse Elec. & Mfg. Co.

GLASSWARE

National X-Ray Reflector Co.

GUARDS, LAMP

Hubbell, Inc., Harvey.
McGill Mfg. Co.

HANGERS, ARC LAMP

Cutter Co., Geo.
General Electric Co.

HANGERS, CONDUIT AND CABLE

Appleton Elec. Co.
Columbia Metal Box Co.
Minerallac Elec. Co.
Pass & Seymour, Inc.
Steel City Elec. Co.
Thomas & Betts Co.

HANGERS, FIXTURE AND BOX

Cutter Co., Geo.

HANGERS, LAMP

Bryant Elec. Co.

HEATERS, LIQUID

General Electric Co.
Westinghouse Elec. & Mfg. Co.

HEATING DEVICES

Commonwealth Edison Co.
Westinghouse Elec. & Mfg. Co.

HOLDERS, SHADE

Hubbell, Inc., Harvey.
National X-Ray Reflector Co.

HOLDERS, BATTERY

Ostrander & Co., W. R.
Stanley & Patterson.

INSTRUMENTS, INDICATING

General Electric Co.
Norton Electrical Instrument Co.
Westinghouse Elec. & Mfg. Co.

INSTRUMENTS, LAMP TESTING

General Elec. Co.

INSTRUMENTS, MINIATURE SWITCH

BOARD
General Elec. Co.
Westinghouse Elec. & Mfg. Co.

INSTRUMENTS, POCKET

Connecticut Tel. & Elec. Co.

INSTRUMENTS, RECORDING AND

CURVE DRAWING
General Elec. Co.
Westinghouse Elec. & Mfg. Co.

INSTRUMENTS, TESTING

General Elec. Co.
Westinghouse Elec. & Mfg. Co.

INSULATION, MOLDED

Johns-Manville, Inc.

INSULATORS, CANOPY

General Elec. Co.

INSULATORS, HIGH VOLTAGE

General Elec. Co.
Stanley, Arthur F.
Johns-Manville, Inc.
Westinghouse Elec. & Mfg. Co.

INSULATORS, TREE

Cutter Co., Geo.

IRONS, CURLING

Westinghouse Elec. & Mfg. Co.

IRONS, SOLDERING

General Elec. Co.

JOINTS, CABLE

Dossert & Co.

JOINTS, FIXTURE INSULATING

Thomas & Betts Co.

LAMPS, ARC

General Elec. Co.
Westinghouse Elec. & Mfg. Co.

LAMPS, AUTOMOBILE

Connecticut Tel. & Elec. Co.

LAMPS, INCANDESCENT

Edison Lamp Works.
General Electric Co.
Hubbell, Inc., Harvey.
Hygrade Lamp Co.
National Lamp Works.
Nilco Lamp Works, Inc.
Westinghouse Lamp Co.

Cash in on the "Nuisance Value" of old style plug fuses



You know how it is to fumble around in a cutout box full of plug fuses

—and squint vainly at the fusible strip showing dimly through the mica "windows"

—and get yourself exercised and your fingers jammed between the flaring metal tops

—while you unscrew every plug in the box

—and finally have to test them all

—and then discover that the blown fuse is the first one you touched

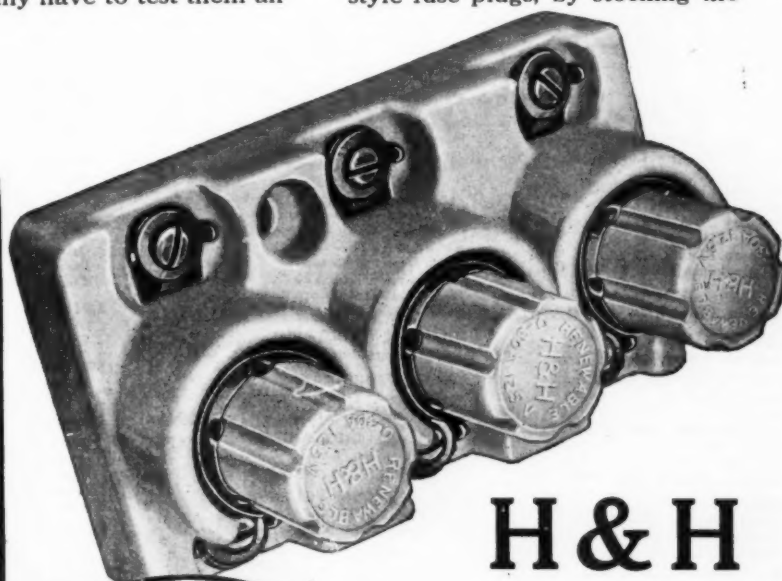
* * * *

You know how it is.

And you know how easy it would be to sell a really good fuse plug that would end this nuisance. That's why you should start in **now** to cash in on the "nuisance value" of the old style fuse plugs, by stocking the

Paist Wiring Material

Paiste Wiring Material affords a complete service to current consumers, electrical dealers and contractors, architects and builders. Every wiring requirement for electrical convenience and service in the home, office, store or shop, can be perfectly met by a Paiste product. Whether you specify, recommend, sell or install wiring material for client or customer, or purchase for your own account, you may be sure that Paiste Service and Quality will perfectly protect your interests.



No metal to touch. Easy grip. Porcelain top. A new core inserted makes a new fuse. The core tells if the fuse is blown.

H & H FUSE PLUG

When an "H & H" blows it's easy to tell—
That's one reason why they're so easy to sell

Another reason is their straight porcelain tops. No metal for users to touch. Plenty of room between the plugs; gives a good grip; makes it easy for the user to screw them in and out of sockets. And they're refillable. To refill, just unscrew the plug, pull out core, and insert new core. Write for details and prices.

The Hart & Hegeman Mfg. Co. **HARTFORD CONN.**

BUYER'S GUIDE—Continued

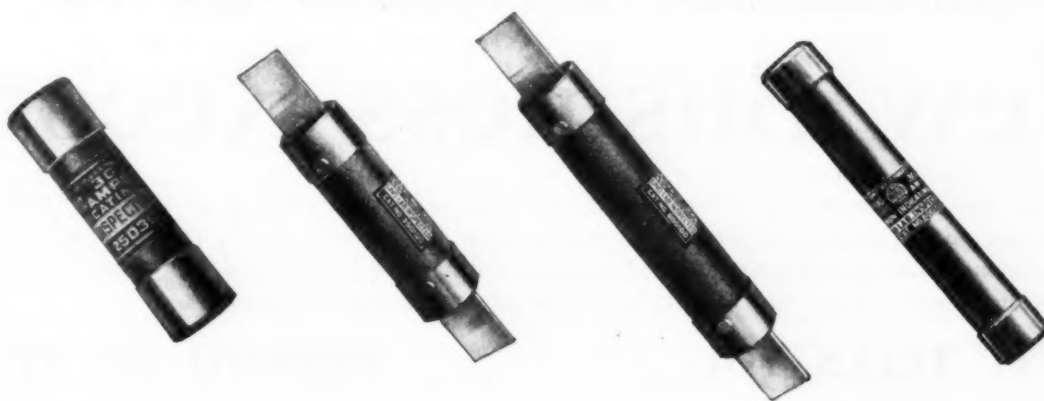
- LAMPS, PHOTO-ENGRAVING**
General Elec. Co.
- LAMPS, TROUBLE, AUTOMOBILE, PORTABLE, HAND**
Connecticut Tel. & Elec. Co.
Stanley & Patterson.
- LIGHTS, STAGE**
Sprague Elec. Wks.
Western Elec. Co.
National X-Ray Reflector Co.
- LOCKS, AUTOMOBILE**
Connecticut Tel. & Elec. Co.
- LOCKNUTS**
Fralick & Co., S. R.
- LUGS, TERMINAL**
Cutter Co., Geo.
Dossert & Co.
Trumbull Elec. Mfg. Co.
- MAGNETIZERS**
Valley Electric Co.
- MOLDED INSULATION**
Cutter-Hammer Mfg. Co.
Johns-Manville, Inc.
Westinghouse Elec. & Mfg. Co.
- MOLDINGS, METALLIC**
Appleton Elec. Co.
National Metal Molding Co.
- MOTOR GENERATORS**
General Electric Co.
Sprague Elec. Wks.
Valley Electric Co.
Westinghouse Elec. & Mfg. Co.
- MOTORS, POWER**
Century Electric Co.
Emerson Elec. Mfg. Co.
General Elec. Co.
Robbins & Myers Co.
Sprague Elec. Works.
Valley Electric Co.
Western Elec. Co.
Westinghouse Elec. & Mfg. Co.
- OZONIZERS, INDUSTRIAL**
Sprague Elec. Wks.
- PADS, HEATING**
Landers, Frary & Clark.
- PAINTS AND COMPOUNDS**
D & W Fuse Co.
General Elec. Co.
Johns-Manville, Inc.
McGill Mfg. Co.
Minerallac Elec. Co.
Standard Underground Cable Co.
- PANEL BOARDS**
Adam Electric Co., Frank.
Plainville Elec'l. Products Co.
Trumbull Electric Mfg. Co.
Westinghouse Elec. & Mfg. Co.
- PERCOLATORS**
Westinghouse Elec. & Mfg. Co.
- PLANTS, LIGHTING**
General Elec. Co.
Western Elec. Co.
Westinghouse Elec. & Mfg. Co.
- PLATES, FLUSH SWITCH**
Arrow Electric Co.
Bryant Elec. Co.
Connecticut Tel. & Elec. Co.
Hubbell, Inc., Harvey.
- PLUGS AND RECEPTACLES**
Arrow Electric Co.
Bryant Elec. Co.
Chicago Fuse Mfg. Co.
Cutter Co., Geo.
Freeman Electric Co.
General Elec. Co.
Hart Mfg. Co.
Hubbell, Inc., Harvey.
Johns-Manville, Inc.
Machen Elec. Mfg. Co.
National Metal Molding Co.
Pass & Seymour, Inc.
Sprague Elec. Wks.
Stanley & Patterson.
Trumbull Electric Mfg. Co.
Western Elec. Co.
Westinghouse Elec. & Mfg. Co.
- PLUGS, SPARK**
Western Elec. Co.
- POLE LINE HARDWARE**
Cutter Co., Geo.
Johns-Manville, Inc.
National Metal Molding Co.
- PORCELAIN, STANDARD**
General Elec. Co.
Thomas & Sons, R.
Trenton Porcelain Co.
- PORTABLES**
Beardslee Chandelier Mfg. Co.
National X-Ray Reflector Co.
- POSTS, LAMP, ORNAMENTAL**
Cutter Co., Geo.
- POTS, MELTING**
General Elec. Co.
Westinghouse Elec. & Mfg. Co.
- PROJECTORS, ELECTRIC**
Cutter Co., Geo.
General Elec. Co.
National X-Ray Reflector Co.
Western Elec. Co.
- PROTECTORS, LINEMEN'S**
Minerallac Elec. Co.
- PROTECTORS, THREAD, CONDUIT**
Enameled Metals Co.
- PROTECTORS**
Connecticut Tel. & Elec. Co.
Minerallac Elec. Co.
Patrick & Wilkins Co.
Stanley & Patterson.
- PUSH BUTTONS**
Machen Elec. Mfg. Co.
- RADIATORS, ELECTRIC**
Westinghouse Elec. & Mfg. Co.
- RADIO APPARATUS**
Eby Mfg. Co., H. H.
General Elec. Co.
Grebe & Co., Inc.
Jewett Mfg. Co.
Martin Copeland Co.
Multiple Storage Bat. Co.
N. Y. Hard Rubber Turning Co.
Ostrander & Co., W. R.
Queens Radio Co.
Radio Courses, Inc.
Scientific Eng. Association
Stanley & Patterson
Tait Knob & Dial Co.
Triangle Electro Trad. Co.
Trumbull Elec. Mfg. Co.
United Radio Laboratories
Victor Radio Corp'n.
Waterbury Button Co.
Workrite Mfg. Co.
World Radio Corp'n.
Zamoiski Co., Jos. M.
- RANGES, ELECTRIC**
Westinghouse Elec. & Mfg. Co.
- REFLECTORS**
National X-Ray Reflector Co.
- REFLECTORS, PORCELAIN, ENAM.**
ELED. IRON AND STEEL
Cutter Co., Geo.
Hubbell, Inc., Harvey.
- REGULATORS, VOLTAGE**
General Elec. Co.
Westinghouse Elec. & Mfg. Co.
- RHEOSTATS**
General Elec. Co.
Valley Electric Co.
Westinghouse Elec. & Mfg. Co.
- ROSETTES**
Adapti Mfg. Co.
Arrow Electric Co.
Bryant Elec. Co.
Crouse-Hinds Co.
Freeman Elec. Co., E. H.
General Elec. Co.
Hubbell, Inc., Harvey.
National Metal Molding Co.
Pass & Seymour, Inc.
Trumbull Electric Mfg. Co.
- SAMOVARS**
Westinghouse Elec. & Mfg. Co.
- SHADES, METALLIC**
Hubbell, Inc., Harvey.
Ostrander & Co., W. R.
- SIGNALS, FACTORY AND OFFICE**
Stanley & Patterson.
- SIGNS, EXIT**
Sprague Elec. Wks.
- SOCKETS AND RECEPTACLES**
Appleton Elec. Co.
Arrow Electric Co.
Cutter Co., Geo.
Conn. Elec. Mfg. Co.
Freeman Electric Co., E. H.
General Elec. Co.
Hubbell, Inc., Harvey.
Johns-Manville, Inc.
National Metal Molding Co.
Ostrander & Co., W. R.
Pass & Seymour, Inc.
Propp Co., H.
Sears, H. D.
Stanley & Patterson.
Trumbull Electric Co., Inc.
- SOLDERLESS CONNECTORS**
Frankel Connector Co.
- SOLDERING COMPOUNDS**
Westinghouse Elec. & Mfg. Co.
- STARTERS, MOTOR**
General Elec. Co.
- STERILIZERS, WATER, ELECTRIC**
Sprague Elec. Wks.
- STOVES, DISC**
Westinghouse Elec. & Mfg. Co.
- STRAPS AND CLAMPS, CONDUIT**
Fralick & Co., S. R.
- SUPPLIES, ELECTRICAL**
Adam Electric Co., Frank.
Amer. Elec'l. Supply Co.
Baltimore Elec'l. Supply Co.
Brooklyn Elec'l. Supply Co.
Doubleday-Hill Elec. Co.
Electric Appliance Co.
Electric Supply & Equip. Co.
Fobes Supply Co.
Fullerton, F. W. L.
Nat'l. Elec'l. Supply Co.
Newark Elec'l. Supply Co.
Ostrander & Co., W. R.
Philadelphia Elec. Co.
Roberts Elec. Supply Co., H. C.
Rumsey Electric Co.
Southern Electric Co.
Stanley & Patterson.
Western Electric Co.
- SWITCHBOARDS, LIGHT AND POWER**
Adam Electric Co., Frank.
Bryant Elec. Co.
Cutter Co., Geo.
General Elec. Co.
Plainville Elec'l. Products Co.
Sprague Elec. Wks.
Trumbull Elec. Mfg. Co.
Westinghouse Elec. & Mfg. Co.
Wurdack Elec. Mfg. Co.
- SWITCHES, BABY KNIFE**
Bryant Elec. Co.
General Elec. Co.
Trumbull Electric Mfg. Co.
- SWITCHES, BATTERY**
Hubbell, Inc., Harvey.
Manhattan Elec'l. Supply Co.
Ostrander & Co., W. R.
Patrick & Wilkins Co.
Trumbull Electric Mfg. Co.
- SWITCHES, DISCONNECTING**
General Electric Co.
Westinghouse Elec. & Mfg. Co.
- SWITCHES, FIXTURE**
Hubbell, Inc., Harvey.
Pass & Seymour, Inc.
- SWITCHES, KNIFE**
Adam Elec. Co., Frank.
General Elec. Co.
Hart Mfg. Co.
Trumbull Elec. Mfg. Co.
Westinghouse Elec. & Mfg. Co.
- SWITCHES, SAFETY**
Adam Elec. Co., Frank.
General Elec. Co.
Johns-Manville, Inc.
Square D. Company
Trumbull Elec. Mfg. Co.
- SWITCHES, SNAP**
Arrow Electric Co.
Connecticut Tel. & Elec. Co.
General Elec. Co.
Hart Mfg. Co.
Hubbell, Inc., Harvey.
Machen Elec. Mfg. Co.
National Metal Molding Co.
Pass & Seymour, Inc.
Trumbull Electric Mfg. Co.
- SWITCHES, TIME, AUTOMATIC**
Berry, A. Hall
General Elec. Co.
- SWITCHES, VOLTMETER**
Frank Adam Electric Co.
Trumbull Elec. Mfg. Co.
- TAPE, INSULATING**
Bishop Gutta-Percha Co.
General Elec. Co.
Johns-Manville, Inc.
N. Y. Insulated Wire Co.
Westinghouse Elec. & Mfg. Co.
- TAPS, CURRENT**
Hubbell, Inc., Harvey.
- TELEPHONES**
Connecticut Tel. & Elec. Co.
Stanley & Patterson
Western Elec. Co.
- TERMINALS, CABLE**
Standard Underground Cable Co.
- TERMINALS, TELEPHONE**
Standard Underground Cable Co.
Western Elec. Co.
- TERMINALS, UNDERGROUND SERVICE**
Dossert & Co.
- FOASTERS**
Westinghouse Elec. & Mfg. Co.
- TOOLS, BORING, ELECTRICIAN'S**
Electric Appliance Co.
Stanley & Patterson.
- TOOLS, COMMUTATOR TRUING**
General Elec. Co.
- TOOLS, PORTABLE, HAND**
General Elec. Co.
- TRANSFORMERS**
Connecticut Tel. & Elec. Co.
General Elec. Co.
Westinghouse Elec. & Mfg. Co.
- VULCANIZERS, ELECTRIC**
Westinghouse Elec. & Mfg. Co.
- WARMERS, FOOT AND RUG**
Westinghouse Elec. & Mfg. Co.
- WASHERS, CLOTHES**
Home Devices Corp'n.
Western Elec. Co.
- WASHERS, DISH**
Western Elec. Co.
- WELDING MACHINES, ELECTRIC**
General Electric Co.
Westinghouse Electric & Mfg. Co.
- WIRE, ANNUNCIATOR AND OFFICE**
American Steel & Wire Co.
General Elec. Co.
Hazard Mfg. Co.
Standard Underground Cable Co.
- WIRE, ARMORED CABLE**
Hazard Mfg. Company.
National Metal Molding Co.
Sprague Elec. Wks.
- WIRE, AUTOMOBILE**
General Elec. Co.
Indiana Rubber & Ins. Wire Co.
N. Y. Ins. Wire Co.
Rome Wire Co.
Safety Ins. Wire & Cable Co.
- WIRE, BARE COPPER**
Hazard Mfg. Company.
Rome Wire Co.
Standard Underground Cable Co.
- WIRE, FUSE**
Appleton Electric Co.
Chicago Fuse Mfg. Co.
General Elec. Co.
- WIRE, GALVANIZED STRAND**
Hazard Mfg. Company.
- WIRE, IRON**
American Steel & Wire Co.
- WIRE, LEAD ENCASED**
American Steel & Wire Co.
Atlantic Ins. Wire & Cable Co.
Bishop Gutta-Percha Co.
General Electric Co.
Hazard Mfg. Co.
Indiana Rubber & Ins. Wire Co.
N. Y. Insulated Wire Co.
Standard Underground Cable Co.
Western Elec. Co.
- WIRE, MAGNET**
American Steel & Wire Co.
Ansonia Electrical Co.
General Electric Co.
Hazard Mfg. Co.
Rome Wire Co.
Standard Underground Cable Co.
Western Electric Co.
- WIRE, RUBBER COVERED**
A. A. Wire Co.
American Steel & Wire Co.
Atlantic Ins. Wire & Cable Co.
Belden Mfg. Co.
Bishop Gutta-Percha Co.
Boston Ins. Wire & Cable Co.
Detroit Insulated Wire Co.
General Electric Co.
Habirshaw Elec. Cable Co.
Hazard Mfg. Company.
Indiana Rubber & Ins. Wire Co.
N. Y. Insulated Wire Co.
Rome Wire Co.
Standard Underground Cable Co.
Western Elec. Co.
- WIRE, TELEPHONE**
A. A. Wire Co.
Rome Wire Co.
Western Electric
- WIRE, WEATHERPROOF**
American Steel & Wire Co.
Ansonia Electrical Co.
General Electric Co.
Hazard Mfg. Co.
Rome Wire Co.
Western Elec. Co.
- WIRELETS**
Steel City Elec. Co.



Some of you urged us to put out a line of NON-INDICATING Noark fuses

And we realize that those of you who want *non-indicating* fuses are entitled to have non-indicating fuses that can be relied on to exhibit in service the same dependable characteristics that have made the NOARK label a certificate of superior fuse quality

everywhere recognized by electrical men. You may be absolutely confident that in every detail of their design and construction the NOARK standard of quality has been and will be steadfastly maintained in the new NOARK non-indicating fuses.



The same Noark quality—through and through!

The Johns-Pratt Company, Hartford, Conn.

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CHICAGO
35 S. Desplaines Street

SAN FRANCISCO
Call Building

ST. LOUIS
Boatmen's Bank Bldg.

PHILADELPHIA
Franklin Trust Bldg.

PITTSBURGH
Bessemer Bldg.

1920-3.

Johns-Pratt

NOARK FUSES AND PROTECTIVE DEVICES

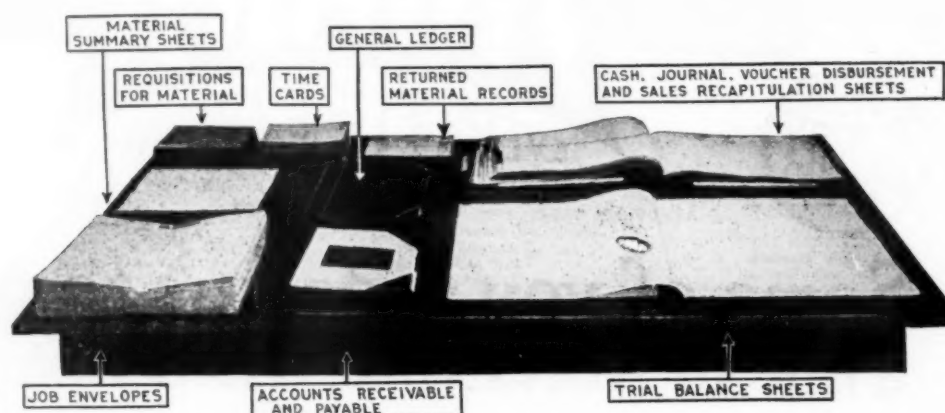
VULCABESTON PACKING AND INSULATION

JOHNS-PRATT MOLDED PRODUCTS

The Electragist Employing a Bookkeeper Should Use the

Standard Accounting System

*Here is the
complete set
just as
it looks
spread out
on an
ordinary
office table*



This is the system adopted by the National Association of Electrical Contractors and Dealers, endorsed by the National Electrical Credit Association, and approved by other branches of the electrical industry.

The Electragial Business Without a Bookkeeper Should Use the

New Business Record

This is an easy and simple way of keeping your accounts without the aid of a bookkeeper. Everything about it is plain and easily understood from start to finish. It consists of only eight forms, and these show the money taken in and paid out; the bills to be collected and to be paid; the general expense, investment and stock. There also is a binder for records, and a simple memo book.

IT TELLS YOU

How much money you have; how much you owe; how much money is due you; how much stock on hand; how much stock you buy; how much you sell; how much it costs you to do business; how much profit you make; or how much you lose; and all other necessary facts regarding your business.

DEPEND ON IT

It is handy, and always ready for you to use; it is reliable and accurate; it saves you time, money, and worry; it settles disputes and saves money for you; it helps you straighten out matters with your banker, your jobber, and the tax collector; it is a necessary factor in your business.

**Look Into this Matter Today and Figure on Starting Your Business Record or
Standard Accounting System**

FULL INFORMATION SENT UPON REQUEST BY THE

ASSOCIATION OF ELECTRAGISTS

INTERNATIONAL

Formerly National Association of Electrical Contractors and Dealers

15 West 37th Street, New York City

IN 1915 the Insurance Committee of the National Association of Electrical Contractors and Dealers investigated and recommended to their membership the plan of Insurance at Cost as conducted by Lynton T. Block & Co., of St. Louis.

Now in 1921, after six years of experience in dealing with this well known insurance organization, this same committee has expressed its continued unqualified satisfaction in the resolution contained on this page.

This resolution is therefore presented in this form for the benefit and information of the membership at large.

SIX YEARS OF SATISFACTION 1915-1921

SIX YEARS of satisfactory dealings with Lynton T. Block & Co., Underwriters, of St. Louis, has prompted your Insurance Committee again to go on record as endorsing their plan of insurance, with the attendant saving in money to our members.

Every Insurance Policy placed with this concern increases its ability to serve you better, both in the lowered rates it has influenced and the yearly saving it accomplishes. If the bulk of our members would avail themselves of this tangible advantage of membership, the saving made possible by the action of your Committee would probably total **Fifty Thousand Dollars Every Year.** Volume of business will do this. Your Insurance Committee has done its part; you should do yours and not only save money for yourself, but help your fellow members to save this enormous aggregate.

EVERY promise made by this underwriting organization has been more than faithfully kept, and the advantages have from time to time been increased without any solicitation or additional obligation on the part of the Assured.

Insurance with them costs less than it did six years ago, the coverage is more complete, and the savings are increased wherever deserved. The individual experience of the individual risk is now taken into account in determining the savings.

Inquiry addressed to Lynton T. Block & Co., Underwriters, St. Louis, Mo., or to the Secretary of your Association will bring full particulars regarding Insurance at Cost.

THE RESOLUTION SPEAKS FOR ITSELF—

RESOLUTION

Recognizing the insurance problems confronting this organization, and for the purpose of procuring the best indemnity at the lowest cost, the Executive Committee of this Association, after a careful and thorough investigation by its Insurance Committee in 1915, endorsed the plan of "Insurance at Cost," as conducted by Lynton T. Block & Co., Underwriters, of St. Louis, Mo., through their several Insurance organizations, and recommended to the members of this Association that they avail themselves of the saving in cost and the high character of service afforded.

WHEREAS, a large proportion of the members of this Association have for the past six years, carried their insurance through Lynton T. Block & Co., and found the saving in money to be substantial and the service to be highly satisfactory, and

WHEREAS, the Executive Committee deems these insurance arrangements to be among the important benefits which have been provided for members of this Association;

NOW, THEREFORE, BE IT RESOLVED, That the Executive Committee ratify its former endorsement of the Insurance and Service afforded by Lynton T. Block & Co. and urge upon those members not now taking advantage of it to lend their cooperation in this respect and communicate with the St. Louis Office of Lynton T. Block & Co. in matters pertaining to Fire, Casualty and Workmen's Compensation Insurance, with a view to adding momentum to this movement and securing for themselves the benefits which are made available for them.

BE IT FURTHER RESOLVED, That the Insurance Committee of the N. A. E. C. & D. finds the affairs of the various Insurance organizations of Lynton T. Block & Co. to be administered honestly and skillfully; financially sound and worthy of confidence; that each such organization has ample assets for the protection of its Policy Holders, being backed in each case by Assets in excess of \$2,000,000, which serves as a direct guarantee for the payment of losses and the elimination of any assessment liability whatsoever.

The Insurance Organizations herein referred to are:—

Employers Indemnity Corporation,	St. Louis, Mo.
Utilities Indemnity Exchange,	St. Louis, Mo.
Utilities Fire Exchange,	Kansas City, Mo.
Exchange Mutual Indemnity Insurance Co.,	Buffalo, N. Y.

(Signed) J. A. Fowler, Chairman Insurance Committee,
National Ass'n Electrical Contractors & Dealers.

"ALPHADUCT"



"ALPHADUCT" is preferred above all other Conduits, Metallic or Non-Metallic, for protecting the Electric Wires connecting Battery, Generator, Lamps, etc. in Automobiles, Motor Trucks, Electric Railway Cars and similar situations, since besides holding the moisture from reaching the wires, it's Exclusive Heavily Glued Cotton Duck Member holds back as well the oils and grease from reaching the insulation on the wires, which when other conduits are used is sooner damaged thereby and short-circuiting occurs.

Non-Metallic Conduit is preferable to Metal Conduits rigid or flexible, for it is more quiet, avoiding the rattle of the metal types, and when a leak of electricity does occur in the insulation on the wires one is saved an electrical shock often when looking for trouble.

MARKING

Yellow thread in or back of lining

ALPHADUCT CO.

Jersey City, N. J.



Made By Appleton

"UNIDUCT" is Appleton made and Appleton marked. It is given the same thorough care during manufacture that is accorded every Appleton Electric Product, and because of this saves time and money in every installation. It is made with 2 or 3 conductors, No. 12 or No. 14 wire.

The conductors are twisted and covered with superior paraffined braid, and will bend easily, as required, without kinking. The armored covering is single strip steel with interlocking edges, producing in the duct a smooth surface that allows the conductors to slide easily as they are bent into position. The armor is easily stripped back when so required.

"UNIDUCT" Armored Conductors carry both the inspection labels of the Underwriters' Laboratories and the Appleton trademark that guarantees you satisfaction.

APPLETON ELECTRIC COMPANY

Factory and General Offices
1704 Wellington Avenue, at Paulina
CHICAGO

Appleton Products Include:



"Unilets," Outlet Boxes and Covers, Laundry Fittings, Locknuts and Bushings, Meter Terminal Fittings, Entrance Fittings, Conduit Clamps and Hangers, also Switch Boxes.

"UNIDUCT"

Reg. U.S. Pat. Office

"Buy Electrical Supplies from Electrical Supply Jobbers"

QUICK REFERENCE LIST for the Convenient Use of Contractor-Dealers, in which Electrical Supply Jobbers in various Sections invite Your Patronage

American Electrical Supply Company

955 WASHINGTON BLVD.,

Chicago

A jobbing distributor which conducts its business with a full realization of its responsibilities to other branches as well as its own branch of the electrical industry.



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Wholesale Only Policy

ESTABLISHED 10 B. G.

(BEFORE GOODWIN)

SOUTHERN ELECTRIC COMPANY

—DISTRIBUTING JOBBERS—

Electrical Merchandise

Household Labor-Saving Appliances—Lighting Fixtures for Home, Office and Factory—Edison Mazda Lamps—Wiring Supplies, Etc.

BALTIMORE, MD.

RICHMOND, VA.

FOBES SUPPLY COMPANY

Wholesale Electrical Supplies

SEATTLE
PORTLAND

SAN FRANCISCO
OAKLAND

25 YEARS' RELIABLE SERVICE—

Complete Stocks, High Grade Electrical Supplies, I.X.L. Rubber Covered and W.P. Wires, Bryant, Hubbell and Arrow E Specialties, Unilet Conduit Fittings, Edison Mazda Lamps, Manning Bowman Heating Devices, Crystal and Rotapex Washing Machines, Sweeper-Vac and Apex Cleaners, Capitol Ironers, Gould Storage Batteries, Radio Supplies, etc.

DOUBLEDAY-HILL ELECTRIC CO.

WHOLESALE

Pittsburgh, Pa.

Washington, D. C.

OVER Forty Years of Constant Observation and Study of Your Requirements in Electrical Supplies.

National Electrical Supply Company

DISTRIBUTORS—JOBBER

1328-30 New York Ave.,

Washington, D. C.

More than 100,000 Square Feet of Floor Space.

Large Stock. Prompt Shipments.

QUALITY! SERVICE!

Deal with a jobber that has always recognized the electrical contractor and where you can depend upon

HIGHEST GRADE OF ELECTRICAL MATERIALS

Right Prices and Immediate Delivery

Baltimore Electrical Supply Co.

BALTIMORE, MD.

For Service—

RUMSEY ELECTRIC COMPANY

1007 ARCH ST., PHILADELPHIA

Distributors

Electric Supplies and Machinery

Yours for Co-operation

Brooklyn Electrical Supply Co.

56 Myrtle Ave., Brooklyn, N. Y.

LARGE STOCK

PROMPT SHIPMENT

Oldest and Largest Electrical Supply Jobbers in New Jersey

Newark Electrical Supply Co.

"The House of Quick Service"

223 Market Street

Newark, N. J.

SALES PRODUCING PROPP PRODUCTS AD-A-LITE

"The finest two-light device made"

NEW LIST
PRICE 75c

NEW LIST
PRICE 75c



Will take Shade Holder, Has Spring Contact in Base of Socket. Will seat in deep Sockets, handsome in appearance.

AD-A-LITE Made For Service

LIBERAL DISCOUNTS

Giving Greater Profits To You

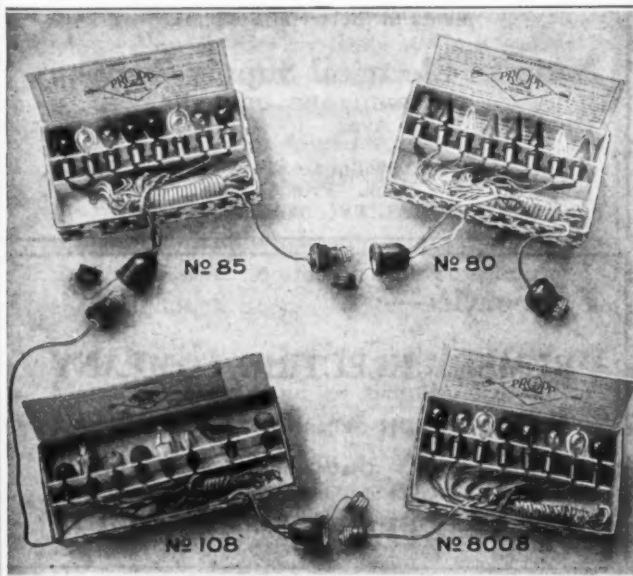
Get a trial carton of 10 from your Jobber or send us your order giving your Jobber's name.

—P—P—P—P—P—P—P—P—P—P—

This One Style Set takes care of Every Demand

**4 Best
Selling
Outfits**

**Liberal
Discounts
Now**



On August 26th, the UNDERWRITERS' LABORATORIES—File No. E5794—have passed and approved the Propp Christmas Tree Lighting Outfits.

This approval now makes them the most desirable for sale.

Old or new sets can easily be attached to the PROPP Continuous Socket Attachment indicated by Arrow.

Sets made up with either Mazda or Carbon Lamps.

Order through your Jobber. Specify the name PROPP

M. PROPP COMPANY

524-528 Broadway, New York City

There is a practical reason for every "T & B" product



T. & B. Bushing Caps are used to seal and protect conduits in buildings during construction.

They are brass, easy to install and stay on the job till removed. A new practical fitting at a cost hardly worth considering.



THE PENNY IN PLACE



THE PENNY

T. & B. Pennies are another method of closing the entrance of conduits before wires are fished, and are made up to include 3" size. If drilled in center they make ideal washers.



T. & B. Plugs are designed to replace a knockout in an Outlet Box. Place in hole—hit with hammer. They expand making a perfect new knockout.

THE THOMAS & BETTS CO.

Factory, Elizabeth, N. J. Boston Office, 10 High St.

New York Office, 63 Vesey St.

Where to Purchase Lighting Fixtures

READY REFERENCE LIST of Lighting Fixture Manufacturers for the convenience of Electrical Contractor-Dealers.



Designers and Manufacturers Lighting
Fixtures of Good Taste at Moderate
Prices

107-109 W. 13th St. New York



DESIGNERS
and
MANUFACTURERS
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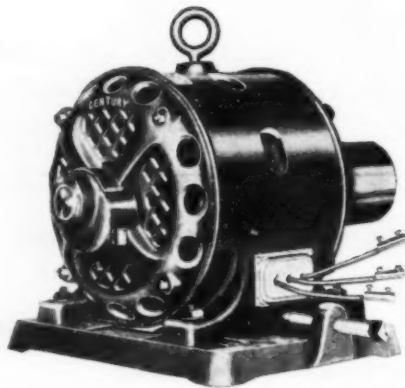


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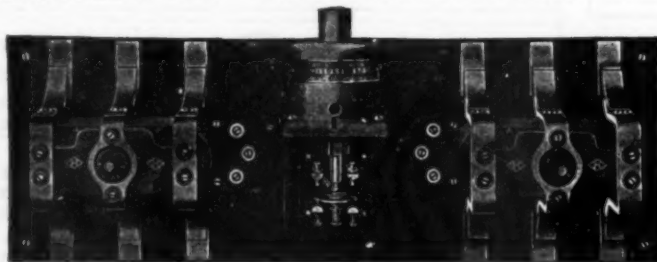
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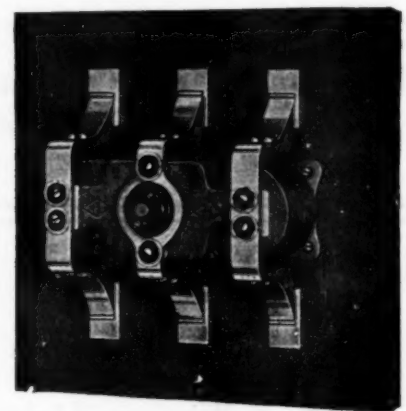
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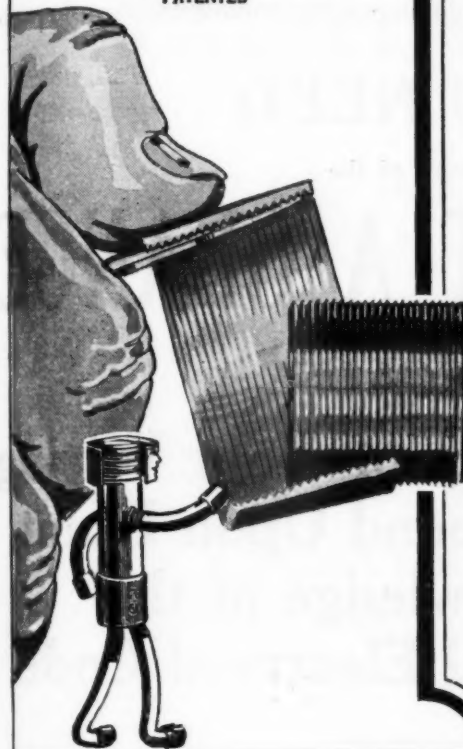
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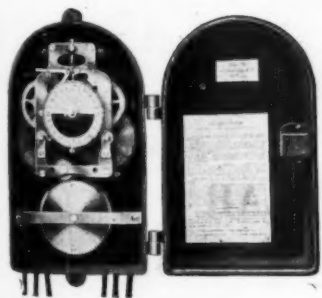
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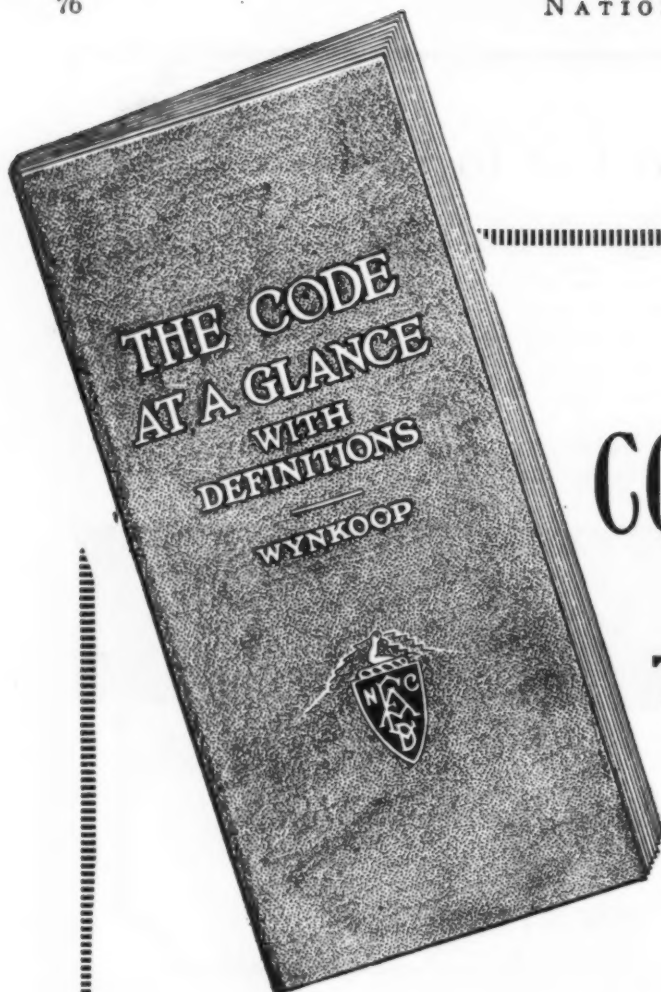
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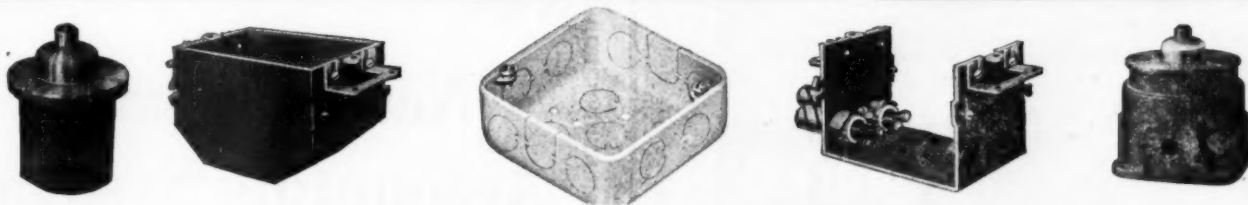
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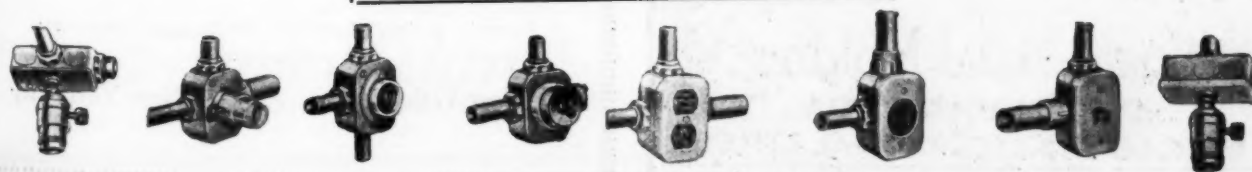
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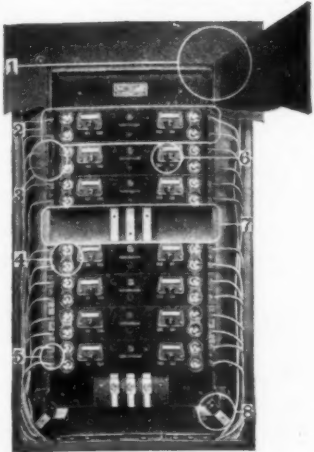
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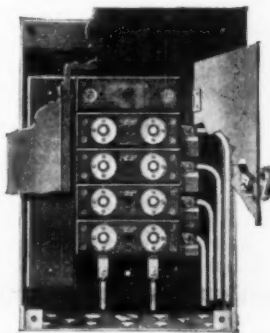
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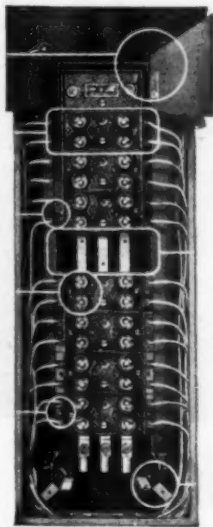
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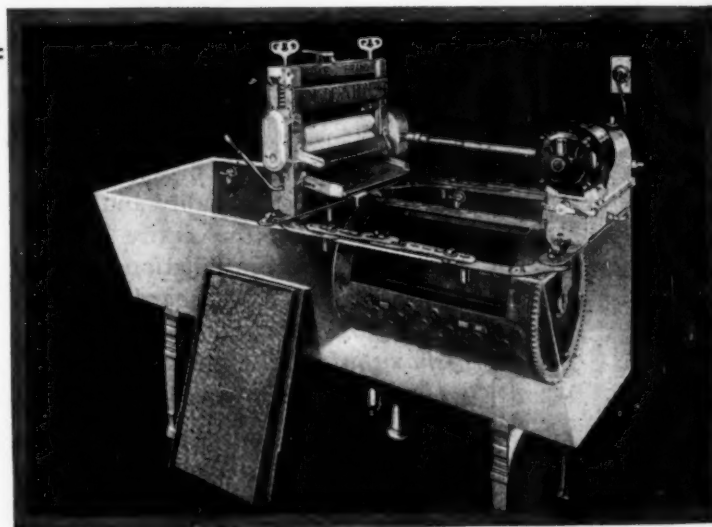
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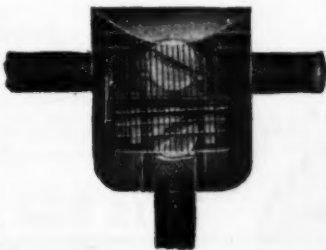
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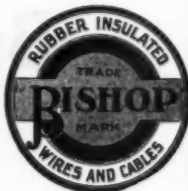
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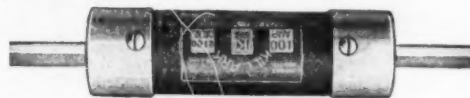
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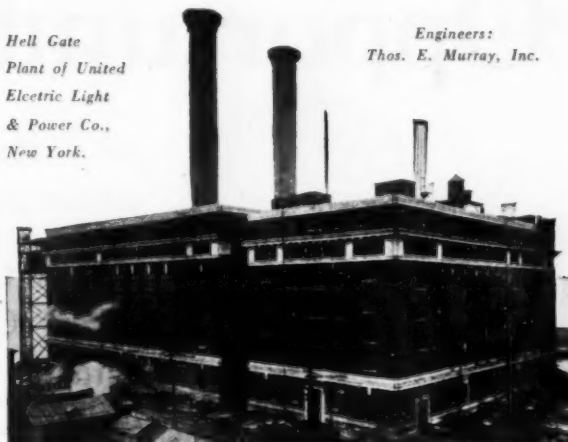
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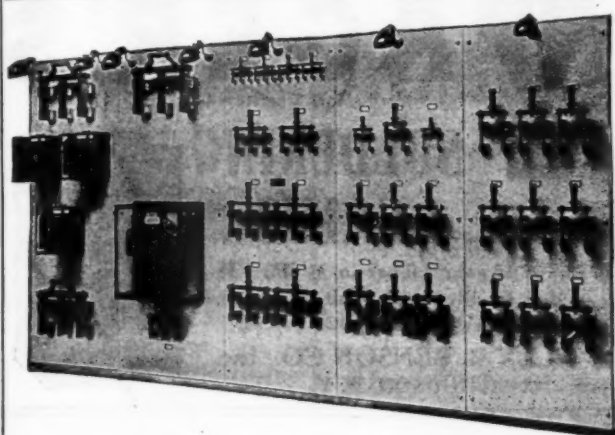
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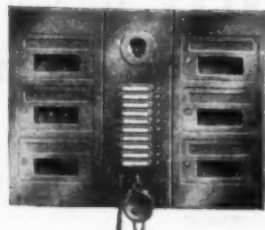
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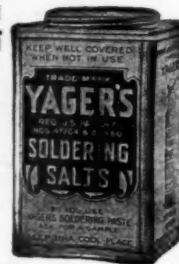
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SUPPLIED BY
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INTERNATIONAL**

Formerly National Association of Electrical Contractors
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"DETROIT" RUBBER COVERED WIRES

Rubber Insulated Wires and Cables

FOR EVERY ELECTRICAL PURPOSE

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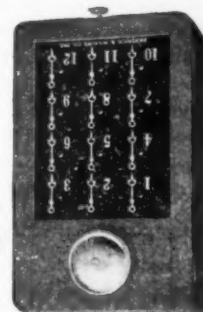
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*Our Annunciators and House Goods in Stock
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**WEATHERPROOF, SLOW BURNING, ANNUNCIATOR, OFFICE
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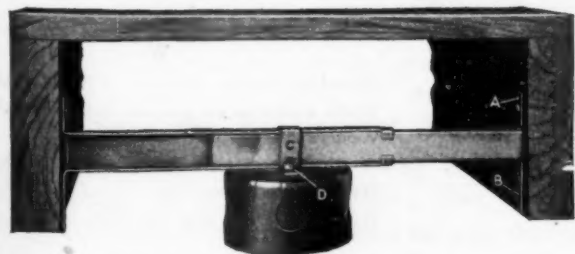


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SYRACUSE, N. Y.806 Twelfth Street, N. W.
WASHINGTON, D. C.**ELECTRICAL SUPPLIES****AUTOMOTIVE EQUIPMENT****Dollars to Doughnuts You Can Save Money!**

THIS IS E-Z BOX SUPPORT NO. 101
The biggest little labor saver in the market.

Green greenbacks against doughy doughnuts and we win!

E-Z 101 enabled a local contractor to wire a 10-room house with a 3-hour saving over the old method. That saving of labor paid for the necessary supports, paid him \$1.00 profit, and gave him three hours to devote to another job.

A little pull telescopes the support into place—four nails install it—a turn of the screwdriver fastens the box—place your conduit and you're ready for the fixture.

We also make 102 which is the same as 101 with the exception that it is designed for knob and tube, having a loomholder, lath rest and $\frac{3}{4}$ inch male thread for fixture. Write your jobber for folder and discounts.

TUCKER MANUFACTURING CO.

Manufacturers Labor Saving Devices

29 North Water Street,

Rochester, N. Y.

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RADIO SERVICE SUPPLEMENT TO THE NATIONAL ELECTRAGIST

PUBLISHED ON THE FIRST OF EVERY MONTH

All Communications Should Be Addressed to
NATIONAL ELECTRAGIST RADIO SERVICE SUPPLEMENT
15 West 37th Street, New York City

National Electragist, formerly Electrical Contractor, was established 21 years ago as the official journal of the National Association of Electrical Contractors & Dealers, now Association of Electragists—International.

Number Six

NOVEMBER, 1922

Ten Cents a Copy

Reviving Interest in Radio

Anyone who still thinks that radio has suffered a relapse should have been taken on a personally conducted tour of the eastern part of the United States while the World Series games were being played. In cities, in towns and in the country, great crowds assembled before innumerable loud speakers and not only heard reports of plays as they occurred but also caught much more of the spirit of the games through the unavoidable transmission of the yells of the fans, individual remarks of fans near the transmitter, etc.

Never in the history of radio has an audience so large been reached. Practically everybody in New York and Brooklyn that did not have to run a trolley car or an elevator or something was a listener to at least a part of every game.

A great deal of credit is to be given the two stations that did the broadcasting, WJZ in Newark and WGY in Schenectady. The plans for the broadcasting were well laid and in each case a wire connection was made from the Polo Grounds to the broadcasting station. WGY had distributed in advance a number of "Radio Score Cards" for fans to keep a record of the plays as they were made and WJZ supplied large box score sheets to be pasted in windows for recording the runs by innings.

Grantland Rice, sporting editor of the New York *Tribune* broadcasted the reports for WJZ and after the first day there was no difficulty in reception. Unfortunately the first afternoon another station in Newark with a very much more powerful transmitting set was broadcasting a concert at the same time. This was on 400 meters while WJZ was on 360 meters, but there was so much interference that it was practically impossible to hear anything on many receiving sets. Telephone calls immediately poured in on the 400 meter transmitting station and they very considerably discontinued their program till the end of the game.

Other broadcasting stations doubtless sent out reports of the games in different parts of the country, but at the time of this writing, complete reports have not come in.

Where the Electragist Stands

In the radio field, the electragist stands in a better position by far than he did six month ago. Then, every possible kind of a store from a drug store through the gamut of 5 and 10 cent stores, candy stores, soda fountains to the

hardware store; all were selling radio equipment and parts. Today much of this competition has disappeared, thanks in part to a somewhat dull summer season. Many of these stores have dumped their merchandise on the market at less-than-cost prices and have gotten out. Radio today is being sold largely through regular electrical jobbers and electrical supply stores. Some of it is still marketed through department stores and hardware stores and competition will no doubt continue from these classes of business. The automobile accessory stores started selling radio equipment when the automobile season was dull. Many of them have dropped it, and it is likely that very few will continue to stay in the radio business.

These developments all go to make it possible for the electragist to market radio with a minimum price competition and with the knowledge that what few lines of business he has to compete with are getting the same trade discounts as he is himself, therefore he is on an equal footing with them.

"The Giants Won"

The United States Army has been conducting experiments in the control of trucks and tanks by wireless. Some weeks ago a demonstration was arranged for a meeting of the Society of Automotive Engineers at Aberdeen, Md. The commanding officers by means of a transmitting set communicated his orders to a tank out in the field. At the officer's command the tank started up, stopped, turned right or left or backed up or did anything he said. The tank was equipped with a receiving set and the operator had the telephone receivers on his ears.

The performance was highly satisfactory to everybody. It so happened that this test was made on the first day of the World's Series. When the tank operator returned to his starting point, some of the engineers started to congratulate him. His first words, after he crawled out of the turret were, "The Giants Won." He had been tuning in on the baseball broadcasting as well as his officer's commands.

Government Aid for Radio

With the possible exception of agriculture, no other industry has received so much attention and so much aid from the Federal Government as has radio. The publication of elementary information concerning radio has done much to arouse public interest in the subject. The co-

operation of the Bureau of Standards in testing manufactured apparatus has done inestimable good in steadying the industry at a time when it needed it most. The coöperation of other government departments in the broadcasting of time signals, weather reports, crop reports, etc., has helped wonderfully.

The helpful attitude of the Department of Commerce in the allotment of hours and wave lengths has made possible successful and uninterrupted broadcasting. Contrasting this with the methods used in England where the industry has been stifled by restrictive regulations, the industry in this country is in a thriving condition. We should be thankful for the broadminded and helpful attitude of our government and while some few regulations have worked a hardship on a few, the many have received the benefits.

Radio Progress and Development

It was predicted not so long ago that radio telephony would undergo vast changes. It was said that we would soon be able to receive messages from an entirely different class of reception equipment which would be cheaper, simpler and more efficient. People who made these predictions said that it was foolish to buy radio equipment because there were so many inventions coming along that before you got the apparatus installed it would be out of date.

These things have not come true and will not come true. Many developments have been made in radio telephony. But no one invention or group of inventions has in any way made present equipment obsolete. The simple crystal receiving set is still as good as it ever was and due to improved methods of broadcasting, it is even better than it was before. The same could be said for the simple vacuum tube detector and other pieces of apparatus ranging upward in their powers of reception.

The loop antenna is being more used than in the past due to improvised design and construction. There are devices on the market to use alternating current for receiving sets. The simple regenerative circuit has been still further improved by its inventor, Armstrong. These are only some of the things that have been done. But as David Sarnoff said in his talk before the New York State Convention last month, the inventions and laboratory developments take nearly a year to get into commercial production, so no dealer need fear that his stock will suddenly become obsolete.

In other lines than telephony, radio has been making progress. Experiments are being carried out to transmit electrical power by wireless. Whether this will be successful or not, no one can tell at this time. If it is successful, it will mean perhaps the scrapping of much of our present electrical power installations. This will mean much to the electrageist. This, like other developments, if it comes, will come slowly, but it will pay the electrageist to keep his ear to the ground for developments.

Keep ahead of the parade, not behind it.

Radio Shows and Conventions

Several radio shows have already been held this fall. More are scheduled and still more will be announced later on. It has been said that last year we had too many shows for the good of the industry. It is a little bit difficult to be certain that this is so. There is no doubt that some of the shows held last year did little good because they were selfishly one sided. Some of them were promoted by people entirely outside the industry and with no other interest than that of making money out of the show and with no thought of what effect the show would have on the future of the radio business. Other shows were carefully handled and were a credit to the promoters and an asset to the radio industry.

The public needed many shows last year and it got them. Interest was red hot and people flocked to shows and conventions by the thousands to see and learn and buy, either then or later.

This year we need more carefully planned shows. We need the earnest counsel of the radio manufacturer, the jobber, the dealer. There is not the wild, disordered scramble of the public to buy anything and everything that is offered. The prospective buyer knows a little more than he did last year. He has been reading, listening and learning. He now knows that a \$25 crystal set will not pick up messages from Paris or London. The day of the show at which manufacturers are exclusively represented is or should be over except in isolated cases. The electrageist must have a hand in the exposition of radio goods because he is the man who stays on the job and keeps the wheels turning.

We need shows this winter. But they must be carefully planned to be of the greatest benefit to manufacturer, jobber, dealer and buyer. None must be overlooked.

Price Reductions, Discounts and Radio Developments


Views of David Sarnoff, General Manager of Radio Corporation of America, in Discussion Following Recent Talk Before Electrageists' State Convention

David Sarnoff, general manager of the Radio Corporation of America, delivered an address before the New York State Convention of Electrageists in September. This address, entitled "The Meaning of Radio and its Possibilities" was printed in the October issue of the RADIO SERVICE SUPPLEMENT. Follow-

ing the address Mr. Sarnoff invited the delegates to shoot questions which he said he would endeavor to answer. As this discussion led up to the subject of department store competition, the protection of the electrageist, price reduction; and the development of new radio apparatus, we quote some of the perti-

nent questions and answers. Mr. Sarnoff said:

I can go on as I have said and talk about radio for a long time but I hope if there are any questions in your minds, if there is any point on which you would like definite information, you will regard this as an informal meeting and



“Just scales and full measure,
injure no man.”
“The full measure of service
goes with Grebe Receiver”
every

Doctor Wm.

THIS year will be a big one for you—if you sell the right kind of apparatus.

The day of plain “radio apparatus” has passed; the public is fast becoming radio wise. Your measure of success depends upon your selling the equipment that performs.

Anyone familiar with Grebe Radio Apparatus will tell you

that it will support your strongest claims.

We have had ten years of experience in satisfying a critical radio public.

Our big modern factory, recently completed, enables us to render the measure of service you and your customers expect with each Grebe Receiver. Our national advertising campaign means more and better sales for you. Write us!

A. H. GREBE & CO., INC.
VAN WYCK BLVD., RICHMOND HILL, N. Y.

Western Branch—
451 East 3rd Street,
Los Angeles, Cal.



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Armstrong U. S. Patent
No. 1113149.

ask questions freely; I shall be very glad to try to answer if I can.

In answer to question as to possibilities of reduction in price Mr. Sarnoff continued:

Our intention is to afford the necessary margin of profit during a normal sales period. We do not regard the present as a normal sales period. We look upon profit as being largely dependent on the rate of turnover, rather than the margin of profit itself. I think it is safe to say that as our production increases we shall increase our discount and we shall try to do it in a way which will not affect those who have purchased apparatus previously. That will be our effort, but we have fixed no time as yet when this change of discount is to go into effect. So far as I know, the list prices will remain the same, but if they are to be changed, we will change list prices as costs to us decrease, but when that time comes we will be careful to see that we do not change our list prices so as to do avoidable injury to those who have purchased apparatus previously.

I can tell you that in the matter of vacuum tubes there has been developed a type that will operate on dry batteries and avoid the use of a storage battery and of course, the charging expense that goes with the storage battery. I do not think a dry battery type of tube will be available possibly until the end of this year, but I think there has been created a sufficient market for the storage battery type of tube so there will be no difficulty in disposing of any stock you may have on hand or you may wish to order for the next six months. Also if dry battery tubes come out there will be enough storage battery type of tubes in use to furnish a replacement business, which will take up all the stock you may have.

In addition I may say that we are making improvements in the apparatus itself, better loud speakers, receivers, but nothing of a revolutionary character which will make obsolete the type now listed and sold. I will also say for your comfort that from the time a good idea is born in the laboratories, up to the time the product is ready for sale, it usually takes anywhere from a year to a year and a half; for it takes about this time to iron out the wrinkles and to get it into quantity production. You cannot change from one type to another suddenly, so I think it safe to assume that the changing of equipment will always be at least two years behind the original invention.

Question: I would like to ask if dry battery tubes will be available? Wouldn't there always be a certain demand for the large tubes operating on batteries?

Answer: I think there will always be a demand for large tubes, although the dry battery tubes will be capable of operating as an amplifier.

Question: I would like to know just where the dry goods stores stand at the present time as to discounts.

Answer: So far as the Radio Corporation is concerned, it has sold to several department stores directly. We have sold to them on the dealer's discount basis only, regardless of the quantity.

I know of one case where the department store offered the Radio Corporation orders to the amount of one million dollars if we would give them a distributors' discount, but we gave them only the 25 percent dealers' discount.

I do not want to be understood as committing the Radio Corporation to any definite policy as to the future, because I think it would be highly unwise for the Radio Corporation to assume now that it knows all there is to know, that it has already found the proper channels of distribution. We would like to obtain the very widest possible sources of distribution and on a basis which will enable the various distributing agencies to operate without injury to themselves and with benefit to the public. The department store position cannot be overlooked.

I think that when the radio device assumes the appearance of a phono-

graph, when you operate on a dry battery or the lighting circuit, you will eliminate the necessity for battery charging, and so on and use the loop antenna on which to receive, you come very near approaching an instrument which will be universal and susceptible to being handled by a number of merchandising houses. The department stores have sold phonographs successfully. Just how to deal with them in the matter of radio, is now under consideration. The Retail Dry Goods Association is studying the problem, but so far we have not jeopardized the position of the electrical dealer, on the contrary we have supported it.

Wants Better Broadcasting

Radio Enthusiast States His Position in Accord With Article on Subject

In a letter received from Benjamin F. Bishop of the progressive firm of electrical dealers, Marble Brothers, Flint, Michigan, the writer gives his views in hearty favor of better broadcasting. His letter follows and it is hoped that by such frank admissions in this connection a solution to the problem may eventually be found:

I am writing you in hopes that I may convey my praise through you to Percy B. Collison for his most splendid editorial reprinted in your October number.

I am the radio representative of the above concern here in a town that first was wild for radio during the first days that The Detroit News, station WWJ started broadcasting. Since the beginning of the warm weather and static, however, and then a radio show



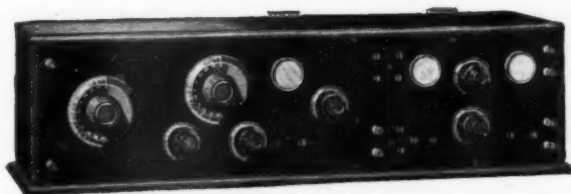
First Complete Window Set Offered to Radio Dealers by the General Electric Company. The Set Consists of a Large Strip to be Attached to the Glass or Background of the Window Together With Two Smaller Strips. There Are Also Two Cutouts in Color to be Placed in the Lower Corners of the Glass, and Two Window Cards. Two Arrangements of This Material Are Shown

URADIOLA

---"Engineered Radio"

THINK of being able—*actually able* to hear each and every broadcasting station within a radio of 600 miles! No matter what the weather, *URADIOLA* Radio Frequency Type Receivers positively bring to the operator the most satisfactory results on a loop antenna consisting of 18 feet of wire. And stations within 20 miles require no ground or antenna connections.

One of the Most Popular Models is This BR2



One step Radio Frequency, Detector, Tuner and Two Step Amplifier, in attractive, hand rubbed solid mahogany cabinet.

Note This About Uradiola Outfits:

No outside wires. No Underwriter's requirements to worry about. Perfectly balanced circuit. Easily tuned by beginners. Stations brought in or out as desired. Volume of sound fills a large room with ease.

Liberal discounts to jobbers and dealers.

Order a sample set to convince yourself first.

UNITED RADIO LABORATORIES

"Engineered Radio"

411 East Pearl St.

Cincinnati, Ohio

that was put on from a monetary standpoint by one man of the town that was not backed at all by any of the electric concerns or the local ARRL, the result was a showing of how rotten radio could be. Never one good selection, although the place was filled with all kinds of sales concerns from outside who knew nothing but how much their stuff sold for. Since that time as I want to say radio has fallen and has not got up yet.

I hope that you will continue to have more publications of this sort to enable

the people who are broadminded enough to feel that we will eventually have everything going good and be able to get rid of the ones that broadcast to advertise themselves alone.

I am not an engineer nor am I as Mr. Collison puts it one of those three hundred fifty thousand experts in the country, but I have been an amateur since a brother of mine came home with the story of his ship in 1906 saving the Republic which our famous Jack Binns gained fame on.

I do the best I am capable of in giv-

ing good music to the public here in the store and I hope that I may some time be able to enjoy the pleasure of good business through the correction of the present conditions and the elimination of such stuff as is allowed to be broadcasted by some of the stations that do anything they can to occupy a couple of hours that we could usefully use to better advantage listening to some concert that we would enjoy.

Here's to better success and the best of luck to you in your own endeavor to boost the thing along.

How the World Series Was Broadcasted

This Accomplishment of Radio Marked an Epochal Step in the Advance of the Science

It has been estimated that over three million people heard the returns of the five games of the World Series baseball games over the radiophone in various parts of the country. This epoch making event was made possible by the New York *Tribune* with the coöperation of the Western Union Telegraph Company, the Westinghouse Electric & Manufacturing Company and the officials of the two New York baseball clubs. Every phase of the games was broadcasted direct from the Polo Grounds over a direct wire to the broadcasting station at Newark and from there through the ether to receiving stations.

Throughout the entire eastern section of the country and far out at sea, hundreds of thousands of listeners heard Grantland Rice, the *Tribune's* sport expert describe every play of the big games and they heard too the frenzied cries of the crowd in the dramatic moments, and especially the thunderous roar that broke loose from time to time as some extraordinary play was made or some favorite player scored a run. Even the cries of the peanut and pop bottle vendors could be heard with surprising clarity and this added a touch of reality to one of the most remarkable pieces of communication ever attempted.

Practically every radio store in the vicinity of New York had a loud speaker in operation, each with its crowds jammed across the pavements and out into the street. In Newark the crowds were so great that traffic came to a standstill in many places and the police were almost on the point of clearing the streets. A loud speaker in Hacken-

sack, N. J., had more than two thousand listeners. Nyack, Bridgeport, Conn., Greenwood Lake, Rutherford, the Oranges, points on Long Island and on the New Jersey coast all reported having perfect reception. An odd feature of reception was noted in the clubhouse of the Ninth Avenue Elevated Railway employes in New York. This is just outside the Polo Grounds and the roof of the building was jammed with spectators who could see every detail of the game on the playing field below. Over their heads was the aerial of the receiving set which gives them regular entertainment. During the games, the spectators were in the unique position of seeing the plays as they occurred and hearing Grantland Rice describe the play. This in spite of the fact that Rice's voice was being carried to Newark by wire and back again through radio to the point where it originated.

The transmitting microphone was located behind the field box next to the visiting players' dugout. Rice and officials surrounded the instrument and shortly after noon each day the transmission of reports began. As the teams entered the grounds, and as notables arrived, these facts were immediately made known to the thousands of listeners.

Ships far out at sea picked up the broadcasting and skippers and others who were privileged to listen reported that the realistic effect of the transmitting with the shouts of the crowds was almost uncanny far out on the briny deep. Princeton University students quit their studies for the day to listen and the campus was packed with students and guests. The *Tribune* office installed three separate receiving sets

in its editorial offices and reports of the progress of the games was transcribed by reporters direct from Rice's reports, sent to the typesetting machines and within a matter of minutes the various special editions of the papers were on the streets and being read by baseball fans.

This is what Grantland Rice has to say about talking to three million people, without a doubt the largest number of people that ever listened to any one human being since the beginning of the world:

We have been asked to tell just how it feels to talk to a million people, scattered over two hundred thousand square miles, in a single address.

After the first pleasant shock, when we discovered that no one could answer us back or cut in with a winning argument, the rest of it was something of a thrill, in this respect, at least:

After the first inaugural statement it was as simple as talking to one man, a dumb man who isn't deaf; as simple as asking for a cigarette or ordering a peck of potatoes from the grocer over the phone.

The most intricate contrivance in the world, to one as unversed in mechanics or electricity as we are, had suddenly become the simplest thing in a highly complex age. If we had ever been addicted to public speaking we might have missed the ringing applause from our audience. Still, there were moments when we almost felt, by overworking the imagination, that we could take the cheers for Frisch and Nehf and Bush as personal tributes at the conclusion of some ringing outburst of eloquence, such as "Kelly strikes out."

Our imagination, possibly, should also have encompassed the great crowds and the distant spaces waiting for the story of each play. There was an early flash of this, but after a single inning it was just as if we had been doing this same thing for twenty years, showing again how quickly human nature adjusts itself to the ways of science and the sudden shocks of modern existence, where the impossible takes place every fifteen or twenty minutes through the day.

RADIO PARTS

Knobs—Dials—Ear Caps—Strain Insulators—Etc.

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METAL STAMPINGS

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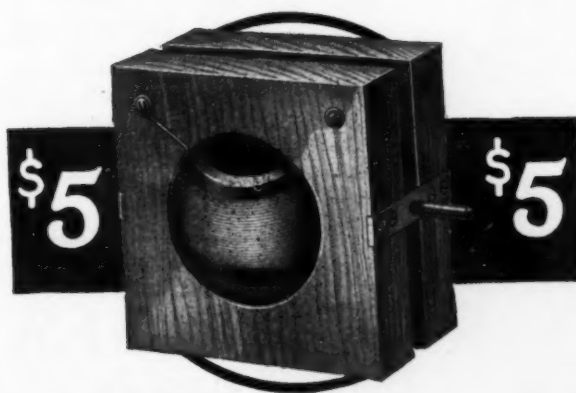
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ALL DESCRIPTIONS

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ALL DESCRIPTIONS

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Police Station Opened

New York Law Enforcers Will Broadcast Information and Alarms

Once again New York's finest have set the example for the other police departments of the globe. Awakened to the possibilities of radio telephony as a factor in the suppression of crime, the New York police department have installed at headquarters the first broadcasting station ever used exclusively for police purposes. The apparatus is of the same general aspect as that by which communication was carried on early this year between Deal Beach, New Jersey and the S. S. America, far out on the Atlantic.

Joseph A. Faurot, the famous finger print pioneer and deputy commissioner in charge of the New York police executive departments, is enthusiastic over the results already obtained with the apparatus. "If what Mr. Evans, the Western Electric engineer who is instructing our operators in the use of the equipment, states is true," Mr. Faurot said, "the New York police department will be able without any difficulty to cover an area of at least 30,000 square miles about this station. This should prove a great aid to us in running down stolen automobiles, locating missing persons, spreading alarms, and in all other work where secrecy is not an essential factor. Every amateur receiving station in a radius of at least 100 miles from the city will become a sort of police outpost, enabling us to spread emergency information at a much quicker rate than is now possible.

"Later as our men gain more experience with the transmission of radio telephonic information it is very likely that we may even use the ether to spread confidential reports. It would not be very difficult to prepare a special code for such purposes."

Other Broadcasting Will Not Interfere

M. R. Brennan, superintendent of the police telegraph division, who with Commissioner Enright himself was mainly influential in clearing the way for the installation of the station, explained some of the radio telephony plans of the local department. "We have already arranged with Mr. Hoover, Secretary of Commerce, for a special wave length for exclusive police purposes," he said. "The fact that there can be no delay in the dissemination of police news makes it out of the question for us to take any chances on being interfered with by the commercial broadcasting stations. Mr. Hoover, who recalled how the New York department was the first to make a success of radio telegraphy for police work some years ago, has been quick to realize our position and has authorized us to send on a 400 meter wave length. Later if it becomes necessary for the Department of Commerce to allow wider scope to any of the present users of the 360 meter wave length, it has been agreed that we will widen our range to 500 meters."

"We have already made arrangements," Mr. Brennan continued, "to equip our police boats and inspection district offices with radio telephonic receiving sets. As we progress with the idea, receiving stations will be installed in all precinct headquarters and special operators will be detailed to attend them twenty-four hours a day. When the other larger cities take to radio telephony for administrative purposes, we expect to be able to establish a network of broadcasting and receiving stations that will make it possible to give a national alarm almost instantaneously."

Will Try to Cross Ocean

First Time in History Amateurs Hope to Communicate With Europe

For the first time in the history of radio communication the amateurs of this country will be given an opportunity of receiving signals from their European colleagues when the third international trans-Atlantic tests are held in December, under the joint auspices of the American Radio Relay League and the wireless societies of England, France and Holland.

As a consequence of the remarkable results obtained last December, when Paul Godley went to Scotland with a super-heterodyne receiver and obtained signals from twenty-nine American amateurs, the British government has let down the barriers against amateur transmitting sets. Permission has been granted the wireless society of Manchester to install a continuous wave transmitter with a output of one kilowatt for the tests. The French government has also allowed more liberal limitations.

The action of the two governments gives the amateurs on this side of the Atlantic an opportunity to prove their ability in reception for the first time. It will also be a novel comparative test between the best practice of European and American apparatus, both for reception and transmission. The official notice of the tests as described by F. H. Schnell, traffic manager of the American Radio Relay League, is as follows:

The third series of trans-Atlantic amateur tests will be conducted by the American Radio Relay League in coöperation with the radio amateurs of England, France and Holland from December 12 to December 31, 1922, inclusive. During the first ten days of the tests American and Canadian amateurs will transmit signals for reception by the radio amateurs of the European countries. Those of the American and Canadian transmitters making the best records as determined by reception reports from the European amateurs will be used to transmit the results of reception by American and Canadian radio amateurs when the English and French radio amateurs are transmitting.

For the first time in the history of amateur radio, American and Canadian amateurs will have an opportunity to demonstrate their skill in receiving amateur signals from across the Atlantic. As a result of the success of the A. R. R. L. trans-Atlantic tests of last December, when a total of thirty radio amateur transmitters succeeded in bridging the Atlantic, the French government permitted the issuance of several amateur transmitting licenses, while the British Post-office Department has issued a special permit to the Wireless Society of Manchester to use a power of 1,000 watts of continuous wave energy for the express purpose of establishing amateur radio communication with the amateurs of the United States.

The American and Canadian members of the American Radio Relay League are highly optimistic in reviewing their chance of hearing the British amateurs using this amount of power, since several American amateurs using less than 500 watts of C. W. energy were heard by Paul F. Godley, who was sent over for the tests by the A. R. R. L. and who was stationed at Ardrossan, Scotland.

Mr. Godley is arranging to establish his record breaking receiver at some point on the north Atlantic coast during the coming tests, with the idea of copying signals from the European amateur stations.

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Why Radiophone Broadcasting Should be Continued

An Interview With H. P. Davis, Vice President of the Westinghouse Company, Originator of the Modern Radiophone Broadcasting Service

"You have asked me, 'why should radiophone broadcasting be continued?' I cannot find any answer to that question as it seems so perfectly obvious to me that radiophone broadcasting has come to stay. Instead of answering I would ask:

"Who wants radio broadcasting stopped?

"What causes anyone to want broadcasting stopped?

"Is the present broadcasting service unsatisfactory?

"If it is unsatisfactory, this should not be a cause for discontinuing it, but rather a reason for greater effort at improvement."

It was evident at once from his reply that H. P. Davis, vice president of the Westinghouse Electric & Manufacturing Company, has been surprised to think that anyone should ask such a question. And little wonder, for the man who was responsible for organizing the first radiophone broadcasting station in the world—this pioneer station being KDKA at East Pittsburgh, Pennsylvania—and the installing of three other stations (KYW at Chicago, Ill., WJZ at Newark, N. J., and WBZ at Springfield, Mass.) has been closely in touch with radio for the past two and a half years and has evidently detected no demand from the public for cessation of radiophone broadcasting activities.

Mr. Davis called attention to the wonderful and phenomenal spread of popular interest in radiophone broadcasting, and stated that he believed that this interest was not waning, but was increasing.

"You have asked me why radiophone broadcasting should be continued," said Mr. Davis. "Perhaps I can answer your question best by saying that I can tell you many reasons why radiophone broadcasting should not be stopped."

"Broadcasting," he continued, "has become a public necessity and is rapidly lining itself up with other utilities such as the telephone, telegraph, electric light, moving pictures, etc., and just as these activities were crude in their beginnings, but later refined to present-day conditions, so, in the same way, will radiophone broadcasting be developed and will cover and make available to all within hearing range, all worth-while activities of general interest to the public."

When Mr. Davis was asked if present conditions under which radiophone broadcasting was done, wherein a free service was given would be continued, he stated in reply that a service of this character offered such benefits to mankind in general that ways would be found for its continuance.

"Why," he said, "consider the effect of discontinuing operations at our four stations! We believe that the combined audience of our four broadcasting stations is at least a million every night in the week. It may be more. This estimate is based on an approximation of the number of radio receivers which have been sold in the territories covered by these stations. What would be the result if all broadcasting stations stopped suddenly, with or without warning, entertaining and informing this vast audience? The effect upon this radio audience would be about the same as would occur if we took away some one or more of

the utilities already referred to, such as the electric light, or the telephone—and we might go even further and say that it might be the same as stopping the newspapers and magazines, and the cutting off of amusements and communications. The effect probably right now would not be so vital as it will be later, as the service improves and grows—as it is bound to do."

"What would happen if this occurred?" was asked of Mr. Davis.

"You know as well as I do," he said, "that there would be a public clamor that would quickly bring some solution of a state or federal nature. I do not believe, however, that this can happen, as there is enough commercial possibility and goodwill in this business to make it worth while for those companies that can benefit from it, to continue the service."

"What is going to happen," Mr. Davis was asked, "if the Federal Government continues its present policy of indiscriminately licensing all applicants to broadcast?"

"Now," said Mr. Davis, "you have touched on the real, vital point. It is my opinion that the public is not going to stay interested in, nor will it support an activity which does not at least approximate a real and satisfactory service. When it becomes possible, as it is now, for anyone with a broadcasting set, good, bad or indifferent, to claim space in the ether and to force themselves upon the listening public, without furnishing quality or a program of interest, the public is going to become disgusted and as a result the interest will flag—for under circumstances of this kind worthwhile service cannot be given by those companies or stations who have the ability and facility to provide a real service,



Radio Breaches the Gap Between City and Country Life. This Fact Should Not Be Forgotten by the Progressive Dealer Who Wants to Make the Most of His Opportunity to Sell People Whose Work Takes Them Out of Town But Who Must Keep in Touch With Happenings in the Metropolis

because of this interference. This is a real danger, as will probably be recognized this fall when receiving conditions become better and hundreds of stations which have been licensed, grow more active."

"Naturally, then you must have some opinion in regard to a way that radio broadcasting should be developed."

To this, Mr. Davis replied, "I have. I have always maintained that, like the telephone and the telegraph, the service is inherently monopolistic in character, and to get the best results, the best programs, the greatest development, the activity should be confined to two or three companies of established reputation, having the necessary facilities and incentive to develop it; that they should be under Federal control and be allowed this privilege as long as they have acceptable service."

"As you object to the large number of stations the Government has licensed, how many do you think sufficient?"

Mr. Davis answered that he believed five or six large, well-located and powerful stations would be sufficient to cover this continent; that these stations should have separate wave bands, and that no other stations should be licensed that would in any way be capable of interfering with the transmission from these large stations. For local purposes there should be a network of low powered local stations on non-interfering wave bands. These stations should be capable of relaying the big stations' service for their immediate vicinity, and should be able to furnish for their locality matters of local interest.

"Do you think, even with this program, that the few companies who would be given the broadcasting privileges by the Government would guarantee permanency of service?"

"That is a hard question to answer," Mr. Davis replied, "but I think it quite probable they would. However, at this period in broadcasting history it is difficult to foresee the future evolution and development. I believe that if these central stations could be licensed, protected and organized, a great step forward would be made, and that it would become a matter of such public value, that endowments or Federal subsidies would be possible which would assist those responsible for the service to carry it on and to continue the development and research required to get the most value out of it."

"What about the Westinghouse Company?"

"I feel that, in answer to that, I can say for the Westinghouse Company that it will not stop a worth while service. We realize the great value of the accruing goodwill to the whole electrical industry, which has come from radio broadcasting; and we further realize the responsibility we have undertaken, and it is our determination to do our share in the perfecting and developing of this important service."

Secures New Position

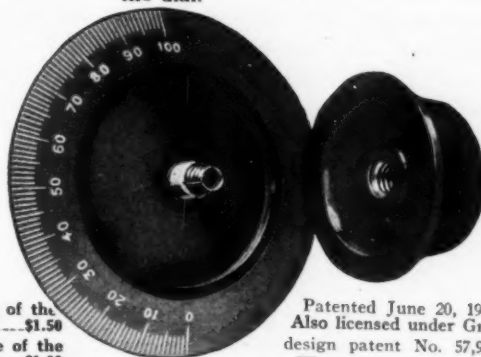
C. W. Horn, manager of the radio division service department, Westinghouse Electric & Manufacturing Company, has been appointed as superintendent of radio operations of that company. Mr. Horn succeeds L. R. Krumm, who left the service of the Westinghouse Company to become manager of the radio department of the Erner-Hopkins Electric Company of Columbus, Ohio.

In his new position, Mr. Horn will have charge of all radio operations of the Westinghouse Company, including complete charge of the company's four radio broadcasting stations, KDKA, at East Pittsburgh; WJZ, at Newark, N. J.; KYW, at Chicago, Ill.; and WBZ, at Springfield, Mass.



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The Selling of Radio by Letter

Dealers Should Know About the Various Methods Employed and the Effectiveness of Each

Selling letters are a great force in the merchandising of products today. Some products can be sold directly by letter and other products need the assistance of advertising, circulars and personal interviews. Radio receiving sets and equipment can and must be sold largely in an impersonal way. That means letters, advertising and circulars. The units are too small and the amounts of money are too small to allow personal salesmanship to pay. Only in exceptional cases will it pay to go out to make a sale. Sales made over the counter are generally the follow up of advertising, letters or display windows which are another form of advertising.

Letters today have a great deal of competition. All kinds of business houses are sending a steady stream of letters to sell goods. Mail order houses have hundreds of correspondents constantly at work turning out letters. The average man is therefore not impressed strongly with a letter today unless there is something out of the ordinary about the letter. There are three things that take a letter out of the general run class, generally consigned to the wastebasket with a swift glance. These things are:

- Attractive letter head.
- Perfection in mechanical form.
- The offer of something that the recipient needs.

Attractive letter heads need not be blazoned out in two or three colors nor need they occupy half the size of the sheet of paper. The finest letter head is of course the engraved letter head on a fine grade of bond paper. A well established house should have such a letter head. The number of letters sent out and the quality of goods it is expected to sell will largely determine how much expense can be gone into to bring a return. It is rather interesting to note that most letters selling stocks and bonds, even of the wildcat variety, are sent out on the finest and most expensive paper and with engraved lettering. It is well known that these business houses bring in wonderful returns from their letters.

In general a letter head cannot be too fine. The better the appearance, the more attention the letter will get when it is received and the whole object of the concern sending the letter is to get across.

The form of the letter is very important. The correct form has not changed in many years except that the use of superlatives in the salutation, body and end of the letter have gone out of use. Such terms as "Your obedient servant," etc., are rapidly disappearing. "Dear sir," "Yours truly" and such other simple terms are better and ring more true.

At the upper right is the date. A double space below and out to the left margin is the name and address of the person the letter is to go to. This is followed either by "dear sir" or "gentlemen." "Yours truly" follows the letter and is started about half way across the sheet. Letters should be balanced on the page. If the letter is a short one and the sheet is large, the typing should be sunk down or it should be narrowed up so as to get a trifle above the center of the sheet leaving almost an equal margin all around.

There are three general methods of turning out circular letters. These are multigraphing, mimeographing and by means of the duplicating typewriter.

Mimeographing, in small quantities is the cheapest method, but is easily detected and as a rule does not produce the good effect of the other methods. The process consists in placing a prepared wax paper in a typewriter and writing the message on this without any ribbon. This cuts the wax away from these places and when the stencil, as it is called, is afterwards placed in a frame and rubbed over with an inked roller, the typed parts allow the ink to come through onto the paper, the wax preventing its going through at other places. A stencil is good for from three hundred to six hundred impressions after which the letters begin to get ragged and torn.

Multigraphed letters are set up in metal type on a machine and the letters are printed from this type through a ribbon. Thousands or millions of letters can be printed as long as the ribbon is renewed from time to time. While a little more expensive than mimeographing for small quantities, this process becomes cheaper as the quantity increases. And the results are better.

The duplicating typewriter operates from a perforated paper ribbon such as in a player piano. Each key is oper-

ated individually and the process exactly duplicates the hand operated typewriter, but the process is slow and unless great quantities of letters are to be written, it hardly pays to go to the expense of sending letters by this method.

Still another method, which, however, is not used so much as the letter printed with typewriter type.

Many mistakes are made in the details of making up circular letters. The positively bad effect produced by some of these is worse than if no letter had been sent at all. Never send out carbon copies to save time. If there are only a few letters to go out, have some one take the time to type each one individually. If there are many letters, use one of the machine processes.

A great mistake that is too often made is in filling in the name and address on a machine printed letter with a ribbon that does not match the body of the letter. This is detected at once and detracts from the effectiveness of the letter.

Rubber stamps for signing letters or signing them in type is also bad. Each letter should be signed in ink. If the man who is sending out the letter has not the time to sign them himself, someone else should be employed to do this, marking a small initial after the name if necessary. Another killjoy in letter writing is the rubber stamp "Dictated but not read." This more often gets on a dictated letter than a circular letter, but it detracts from any letter's effectiveness.

As to the contents of the letter, this will depend largely on what the letter is intended to sell. Speak right out in the same kind of language that you would use if you were talking to a man. Too many stilted forms nullify a letter.

Another important thing to keep track of in sending circular letters is the mailing list. In another article several issues ago we gave some methods of getting up lists from telephone books, customer lists, etc. Any list gradually becomes inaccurate because of removals, change of address and the adding of new names. When the post office department cannot find an addressee the letter is returned to the writer and unless a better address can be found, the name should be crossed off the list to save time and expense the next time the list is used.

New Era in Wireless Heralded

By JACK BINNS

Vacuum Tubes That Bridged Atlantic Can Be Held in Hand—Promise New York to London Transmission

A new era in the art of communication dawned on October 15 when the vacuum tube was used for the first time in history to bridge the Atlantic Ocean with wireless telegraph signals on a commercial basis, says this well known writer in the *New York Tribune*. On that date there was born the practical application of an instrument that is destined to revolutionize completely our present means of international communication and also our system of transmitting power from one point to another over vast distances. The account continues:

To the average layman there is an air of mystery surrounding the vacuum tube. It has been named the modern Alladins lamp because of its apparently unlimited possibilities.

It is, however, a very simple device. Its debut on a practical basis in power form sounds the death knell of the gigantic revolving machinery now necessary for the purpose of trans-Atlantic communication and power transmission. It brings nearer to us the day when wireless telephone conversation between New York and London will be an everyday occurrence as dependable as the ordinary telephone service within the city limits.

Known to All Radio Fans

The vacuum tube is nothing more than the ordinary electric light bulb with special additions. Around the filament inside the glass bulb there is a spiral wire, known as the grid and around this grid there is a metal sheath known as the plate. It is the instrument known to all radio fans.

Ever since it was first discovered by Lee de Forest, attempts have been made to construct it of sufficient size to handle large amounts of power. For several years, however, the problem of sealing metal to glass in a joint that would resist wide changes in temperature and still retain the high vacuum inside the glass remained unsolved for tubes with a greater power than one electric horsepower.

Within the last twelve months this problem has been successfully mastered, and in addition to this a means of keeping the tube cool during operation has also been developed successfully. The solution of these two points, however,

was not sufficient to bring about trans-Atlantic communication and power transmission. In order to function properly the vacuum tube needs a very high voltage upon its plate, which must be direct current.

There is no satisfactory way of producing direct current of this high voltage by means of a dynamo. The scientists therefore were confronted with the necessity of some subterfuge, and the vacuum tube itself was chosen for the task. Alternating current was transformed up until a pressure of 15,000 volts was attained. Then it was passed through a special type of vacuum tube which has only the filament and the plate. This tube has the property of acting as a valve, permitting current to flow through it in one direction only and stopping current in the reverse direction. The result is that it has an output of pulsating current flowing in one direction only with a voltage of 15,000, which is placed on the plate circuits of the power vacuum tubes.

The tubes used at Rocky Point, L. I., when the successful experiment took place, can be conveniently held in one hand, yet they replaced ponderous machinery which needs a large room to house it. The tube only requires two coils of wire attached to it, in order to function, and it will then operate without fatigue, and without being watched. It has no moving parts to get out of order, nor does it require any oiling or overhauling at frequent intervals.

20 Kilowatt Tubes

Prior to the sixteen hour continuous test made there have been months of quiet, steady experimentation at Rocky Point. The tubes used have a power output of 20 kilowatts each—or in other words 20 electrical horsepower. The rectifying vacuum tubes used with them and known as kenetrons have an output of 50 kilowatts.

By a strange coincidence the first practical application of these 20 kilowatt tubes comes at a moment when the first 100 kilowatt tubes has been successfully produced. It is this tube that is expected to bring about the first real trans-Atlantic telephone conversation.

The remarkable feature of the vacuum tube as a means of handling

large amounts of power is the fact that it will produce alternating current at any frequency desired up to 300,000,000 cycles a second. The gigantic alternators used in electrical work will produce only the frequency for which they are designed.

It is this remarkable character of the vacuum tube which gives promise of revolutionizing power transmission across the country in the near future.

Show Held in Chicago

An unusually successful radio show was held in the Coliseum, Chicago, from October 14 to 21. As its aims and purposes were of the highest order it was endorsed by the Radio Chamber of Commerce and had the full support of this body. Only those manufacturers having the highest standard in the trade were permitted to display exhibitions of their products.

Broadcasting Schedule

On the first day of October a new broadcasting schedule went into effect in the central and eastern part of the United States. Instead of the numerous conflicts and overlapping of constantly enlarged broadcasting programs, the stations have agreed to a program that allots to each a definite number of hours each week. Congestion has been considerably relieved by special permits issued to four of the most powerful stations under which they may transmit at 400 meters instead of 360 meters on which they had been previously working.

It is possible on many sets to tune for either one or the other of these wave lengths and so programs may go on simultaneously and the receivers can be tuned to catch either of the concerts or messages. Moreover, the new schedule provides for a continuous program from 7 A. M. till midnight.

The first few days of the new program developed some interference trouble, especially when a 360 meter station was broadcasting the plays of the World's Series games. A 400 meter station, more powerful than the other caused so much trouble with receiving sets that were unable to tune it out that the 400 meter station was compelled to discon-

tinue its musical program. Since the first trouble, things have improved somewhat and it is generally believed that engineers will make it feasible to operate two powerful stations in the same locality with only a slight difference in wave length.

Crystal Sets Supreme

In spite of the many advantages of the vacuum tube receiving set, the crystal set is not losing any of its popularity. For inexpensive installations it still reigns supreme and where great distances do not have to be covered, the crystal set gives a more natural and true reception than the vacuum tube set. The best tube in the best circuit produces a certain amount of distortion due to the fact that the characteristic of the tube is not a straight line.

Broadcast Athletic Events

The authorities at Yale University announce that in the future athletic events will be broadcasted by radio to the surrounding cities. This means that anyone within a distance of 25 to 50 miles of New Haven will be able to receive by radio, play-by-play reports of the football games, hockey, lacrosse, etc., all that is necessary is a small crystal radio receiving outfit.

WJZ Has First Birthday

On the evening of October 5, station WJZ at Newark, N. J., held its first birthday anniversary. It was officially opened one year before that date with the playing of several phonograph records to enable those then in possession of receiving sets to tune in their instruments. A little bit later the play by play reports recording the progress of the 1921 World Series were broadcasted.

The first artists to broadcast in person were: the Shannon Four, Billy Jones, Ernest Hare, Constance Karla, Anna Welch, Sara and Nelly Kouns and Bessie Lane Sheppard. Among the prominent people who have broadcasted messages through the air from WJZ during the past year are Hiram Percy Maxim, Joseph Tumulty, Admiral Gleaves, General Hale, Frank Carne, Lyman Abbott, de Wolf Hopper, Rabbi Wise, Claire Briggs, Dr. Royal Copeland, William J. Flynn, Senator Freylinghuysen and New York's Police Commissioner Richard Enright.

Opera stars include Johanna Gadske, Odette Le Fontenay, Alice Verlet, Cecil Arden, May Peterson, Gretchen Hood, Luella Melius, Margaret Namara, Frances Paperte, Philine Falco, Lydia Lipowska, Valentine Crespi, Sasha Grainger, Ignatz Friedman, Percy Grainger and others.

The broadcasting of two World Series games, of several prize fights and of music, lectures and commercial services of a great variety are surely a great credit to this, one of America's foremost broadcasting stations.

Music Trades Consider Radio

The convention of music trades which was held in New York considered the proposition of whether retail music stores should handle radio equipment. In a report to the convention, the Trade Service Bureau of the Music Trades Chamber of Commerce considered the question of whether the radio was in effect a musical instrument and whether the music merchant was the logical channel of distribution of radio apparatus.

The consensus of opinion was that radio and music would be closely bound together but there was wide difference of opinion as to the retailing of equipment through music houses and it was decided that for the time being the music houses would watch on the side lines and not attempt to retail the material. Radio needs the help and coöperation of the music trades but obviously

the retailing of this material belongs in the hands of electrical dealers and not in the hands of those who know nothing of the principles of operation or practical application of radiophone to the home.

Apartment House Concerts

A choice of listening in to either of two programmes being sent out by the big broadcasting stations will be a feature of a unique radio system being installed in a seventy-two family apartment house in Newark, N. J., by the Davis Electric Company. Two complete receiving sets will be installed, each with a large loop or directional aerial, pointed to a particular broadcasting station and the programme received without interference from whatever may be coming in on the other loop.

A special radio room in charge of a licensed operator will house the equipment. From this room will emanate two complete circuits connected to each of the seventy-two apartments, and so arranged that the tenant may plug in his receiving set to whichever of two programs he may prefer. The apartment operator will tune in each evening to the two stations that offer the best programs or are heard the clearest, and in this way the tenants will be able to enjoy the best in the ether each night with the least of trouble.

Two elaborate receiving sets, each equipped with a detector tube, two stages of audio and two steps of radio frequency, will be installed.



While it is Almost Too Late Now to Figure on Any More Business from the Vacationist This Season, it Must be Remembered That Another Season is Coming and We Want to be in Position to Capitalize on Mistakes of the Past in Dealing With This Valuable Trade

Pushing Sale of Radio Meters

The radio craze which has struck the country in the past few months produced a market for radio apparatus and accessories that has caused certain unsettled conditions as regards the suitability of the several types of apparatus. The average person's only desire was to obtain any kind of a radio apparatus that was suitable for listening to the radio concerts, without question as to future needs. This was particularly true with vacuum tube instruments, and the public's inexperience in the operation of such devices has caused the creation of some diffidence in the public mind as to the practicability of such outfits. Many persons have found that the best method of operating a vacuum tube detector is by knowing the amount of current supplied to the filament and the voltage of the B battery at any time. Another thing that makes for efficient operation is the ability to adjust the instrument so that previous settings which have proved satisfactory may be obtained quickly and easily. This can be accomplished by meters, and there are several on the market for this purpose.

In order to best present the need of these meters to the public, the Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa., has devised a window card which allows the showing of three radio instruments. It is printed in orange and black and makes a striking appearance.

Tait Knob and Dial

A knob and dial for radio use that does not require the use of set screws is placed on the market by the Tait Knob and Dial Co., 11 East 42nd Street, New York City. To mount the knob and dial it is only necessary to hold the



dial with one hand and screw the knob on with the other hand. No tools are necessary, and when fastened to the shaft there is no wobble. The device is self aligning and self centering. The numerals are at the correct angle for best visibility. Both knobs and dials are made of Bakelite which is given a high finish.

Queens Vario Coupler

The vario coupler being placed on the market by the Queens Radio Co., Inc., 12 Forest Street, Winfield, L. I., is of rigid mechanical construction. The primary and secondary tubes are of black Bakelite and the aluminum base permits of either base or panel mounting. There is a special stop of nickel plated brass. Extreme selectivity is secured by using the primary and secondary at an angle so

that the shaft rotates through an arc of 180 degrees. The primary and secondary are wound with green silk covered wire and the primary has seven single turn taps and seven multiple turn taps which allows tuning to one turn. The connections are Fahnestock, noiseless and nothing to scrape or wear. The shaft is $\frac{1}{4}$ inch working in a long reamed bearing. The price is \$5.

New Rectigon Rectifier

A new type of rectigon known as the Radio-Type Rectigon, designed primarily to charge 11 or 12 cell plate batteries, such as are used for radio receiving sets, but also suitable for charging 3-cell filament batteries or three and six cell automobile starting and lighting batteries, is being manufactured by the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.

This type of rectigon is similar to the private garage type, being portable and automatic in operation. Although primarily designed to charge 11 or 12 cell batteries at 0.2 amperes, it is supplied with a tap in the transformer winding which makes it possible to charge 3-cell batteries at 2 amperes and 6-cell batteries at $1\frac{1}{2}$ amperes.

At the top of the transformer is a fuse block which is so arranged that, when the fuse is in the extreme left position, the Rectigon will charge an 11 or 12 cell battery and, when the fuse is at the right, will charge a 3 or 6 cell battery. Since only one fuse can be inserted at one time, there is no possibility of an incorrect connection.

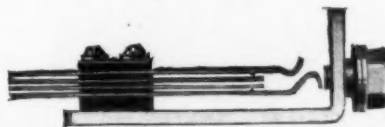
After the fuse is in the proper position, the rectigon can be started by clasping the battery clips over the terminals on the battery and turning on the current at the lamp socket. To stop charging, the current is turned off and the battery is disconnected.

Valler Storage Battery Charger

The Valley Electric Co., 3157 Kingshighway, St. Louis, Mo., is making a home battery charger for both A and B batteries. It plugs in on the house wiring circuit just like a lamp, the charging clips being attached to the battery terminals. It will charge the A battery at a 5 ampere rate and the B battery at $\frac{1}{2}$ ampere rate. It is furnished complete with indicator, extension plug and cord and battery clamps. The charger is mounted in a glass panel case. The price is \$18.

De Veau Radio Jacks

These jacks have in some cases been adopted by manufacturers as standard equipment in radio sets, amplifiers and other apparatus. They are also suitable for amateur work in the construction of sets. They are designed to mount a $\frac{3}{16}$ or $\frac{1}{4}$ inch panel. The length overall is $3\frac{1}{2}$



inches, width of frame $\frac{1}{2}$ inch and height of frame $\frac{3}{4}$ inch. The construction is nickel plated brass and the insulation Bakelite. The sleeve and washer are polished nickel. Pure silver contacts are used.

The jacks can be used with any standard radio plugs. Prices and styles are: Open circuit jack, 70 cents; closed

circuit jack, 85 cents; two-circuit jack, \$1; single filament control jack, \$1; double filament control jack for first stage of two-stage amplifier, \$1.20. The last stage of a two-stage amplifier usually uses a single filament control jack. Made by Stanley & Patterson, West and Hubert Streets, New York City.

Workrite Super Vario Coupler

The Workrite Mfg. Co., Cleveland, Ohio, is bringing out a 180 degree vario coupler which is said to tune twice as sharp as a 90 degree instrument. Double springs eliminate scratching sounds. Both primary and secondary tubes are made of Formica and all metal parts are polished brass or nickel plate. The shaft is 3/16 in. The instrument is recommended for use on the Armstrong super regenerative circuit. The price is \$5.

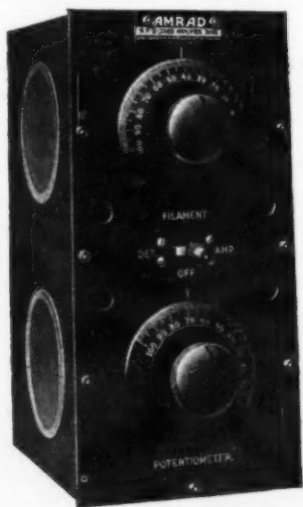
ABC Honeycomb Coils

The Jewett Mfg. Corp., 342 Madison Avenue, New York City, is manufacturing honeycomb coils intended to be built into receiving stations for getting unlimited wave length range. They are made in sizes to pick up every known wave length from 150 to 20,000 meters.

They snap into coil mountings with a good electrical contact and have a low natural period, low high-frequency resistance and low distributed capacity. All sizes have a standard inside diameter of 2 in., and a width of 1 in. The special mounting allows quick changing from one size to the other. Prices range from \$1.40 to \$3.35.

Amrad Frequency Amplifier

The American Radio and Research Corp., Medford Hillside, Mass., is now bringing out two types of radio frequency amplifiers, No. 3071, particularly for use with Amrad Short Wave Tuner and Amrad Detector two-stage amplifier; and No. 3045 for use with any of the Amrad units. Both types are identical except that 3071 is encased in a



cabinet with round corners while 3045 is in a cabinet with square corners. Both types permit the use of different wave range radio frequency amplifying transformers.

Two Radioformers are inserted in molded sockets in the rear of the instrument and two dial adjustments only are necessary. Each amplifier is provided with an insulated switch for cutting out the radio frequency amplification, thus permitting the use of the detector together with any

audio frequency amplification with which the receiving set may be equipped. The price of either of the amplifiers is \$30 and the Radioformers are \$5 each.

Kayess Receiving Set

A crystal receiving set using a pancake variometer is being marketed by the Kny-Scheerer Corp., of America, 56-58 West 23rd Street, New York City. The detector is of the catwhisker variety and can be easily adjusted by reason of being pivoted on a spring type adjustable universal joint. Beside the fixed condenser across the phone terminals there is an additional condenser in the ground circuit which increases the range. The instrument panel is of rubber composition and the phones are 2200 ohms.

New Manufacturing Company Formed

The Cheshire Mfg. Co., West Cheshire, Conn., has been formed to manufacture various electrical sundries and radio parts and equipment. It will take over a plant adjoining the Connecticut Brass Works. The officers include F. Cranton, Thomas and A. E. Jones. Over \$50,000 will be spent in improvements and several hundred men are to be employed.

Score Card for Baseball

Broadcasting station WGY at Schenectady, N. Y., was one of the several stations that broadcasted the play by play reports of the World Series games.

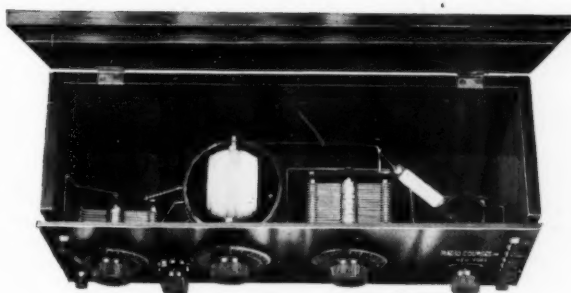
To make the plays live before the eyes of the listeners special score cards were widely distributed to radio fans.

The cards consisted of a complete diamond with all positions plainly marked and with space at each side for the names of players. So far the general layout is similar to the huge playing scoreboards used to illustrate the games for the benefit of crowds before newspaper offices and in auditoriums. But the scoreboard itself, without some scheme for making the plays interesting, would be useless. This its originators have accomplished by supplying a series of cut-outs which correspond to the ball and the batters. As the ball is pitched, thrown or batted its movement will be described by the observer at the ball grounds and the operator at the receiving set can follow its path. In the same way, small cut-outs of the batters can be shifted about the field in accordance with the real location of the players.



"It's Really Fun to Take Down Shorthand Notes of Radio Speeches," Declares Ruth Baker of Pittsburgh, Who Finds Unlimited Opportunity for Practice in Transcribing Text of Lectures Sent Out From Broadcasting Stations

**A Real
Tube Set
at a
Popular
Price**



(Panel Size: 7 x 18 inches)

**LIST:
\$27.50**

Complete Assembly

The Surest Selling Tube Set in the Field

Here is a set that sells! It sells itself on the basis of giving the most value for the least money. It is a high grade standard tube set with double tuning circuit at little more than the cost of a good crystal set. The set displayed in dealers' stores sells three to one over other similar type sets. Have this winner for the new radio season and get the bulk of the business. Our greatest claim for this set is that you would buy it yourself if you were in the amateur's place.

The set is supplied with the 7" x 18" hard rubber panel, drilled and engraved and fastened to the handsome mahogany-finished cabinet; all parts are packed in the cabinet and include all connecting wires cut, bent, and turned ready for soldering; instructions for assembling are supplied. Securely packed in shipping carton.

PLACE YOUR ORDERS NOW FOR EARLY DELIVERIES

Radio Courses, Inc.

552 Seventh Avenue,

(Dept. N E 2)

New York City

DEALERS:

A large turnover and liberal discounts make this a very attractive proposition for all dealers. Write us giving your immediate requirements.

On orders for 10 or more sets one of order is sent completely assembled for demonstration or display purposes.

DISTRIBUTORS:

A few territories remain open for proven distributor organizations who can give us good sales representation. Distributor rights for the territory that you can efficiently handle.

Write, giving estimate of your needs.

RADIOGRAM NO. 1

The Much Talked of C. R. C. Circuit

Radio Frequency

(eliminating the use of transformers)

We are presenting the Radio public with the results of our efforts in producing a Radio-Frequency Amplifier having one stage of Radio-Frequency as a detector and two of Audio for amplification.

Until recently Radio-Frequency has been in a stage of development and very little success has been obtained in constructing an instrument giving complete satisfaction. Radio-Frequency correctly applied is far superior to the more sensitive regenerative circuits. It is more easily tuned, and totally eliminates general capacity effects which are objectionable.

On introducing the C. R. C. CIRCUIT, we guarantee the very highest efficiency for radio reception. This accomplishment has been attained by many months of extensive experiments which has prepared us to construct the C. R. C. CIRCUIT with the finest of materials, using parts manufactured exclusively by us guaranteeing maximum efficiency. This selection in combination with a patented circuit is the answer to its success.

WE OFFER DEALERS AND JOBBERS, who have been skeptical in the past, an opportunity to hear Radio-Frequency at its best.

Write or wire your order for a sample set, complete details and discounts.

Circle Radio Company, 5 Columbus Circle, New York City

*"Circleteed is **T** Guaranteed"*

Proof Against the Careless or Ignorant Operator

These Features Make Type "A" Switches SAFE



In Fig. 1 operator cannot open box, because Switch is closed. He must throw into "off" position first.

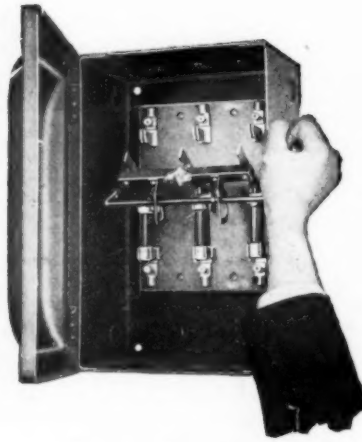


Fig. 2. Operator cannot close Switch because cover is open. He must first close the box.
(The interlocking catch can be manipulated by expert when necessary to examine Switch under load.)



Fig. 3. Operator cannot touch a live part as the shield covers the upper contacts which are alive, as well as the entire Switch, which is dead.
Dead Fuses only are exposed and can be renewed with absolute safety.
(Shield can easily be removed when necessary for expert to examine Switch.)

Write for the new Circle T Bulletin No. 4. It can be obtained from any branch office or from the factory.

The Trumbull Electric Mfg. Co.

Plainville, Conn.

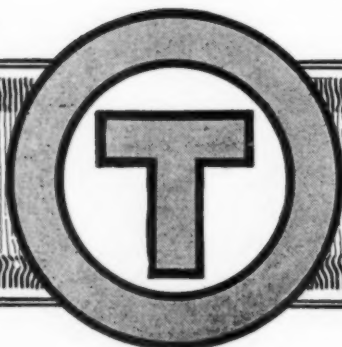
NEW YORK
114 Liberty St.

BOSTON

CHICAGO
40 S. Clinton St.

PHILADELPHIA

SAN FRANCISCO
595 Mission St.



Safety Switches